



# THE TRUTH ABOUT TESTOSTERONE

Discover the Secrets to Boost  
your Testosterone... Naturally,  
Safely, & Quickly



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## Intro by Mike Geary

Myrtle Beach, SC, October 2014

After smacking a 300 yard monster drive right down the middle of a long par 4 and getting a bunch of manly high fives from my scramble partners, I got into the cart with my buddy Brian, a long time friend for over 20 years now that I've known since college. We were catching up on things, and Brian confides in me that he's been taking a Testosterone drug therapy recently.

He explained that he's had the hardest time getting rid of his love handles and belly fat, his energy and sex drive have both been low, he's been stressed out at work, and even his sleep has been suffering for some time. He said it's been getting progressively worse every year, and he feels like half the man he was in his 20's.



I said something along the lines of "What the hell man, you're only 40 years old! Don't you know that once you start taking that stuff, you'll actually harm your natural production of Testosterone, and you'll be doomed to taking that for the rest of your life?" I went on to explain to Brian that there are DOZENS of things he can do to naturally bring back his Testosterone levels in a much safer way, and that would benefit his health instead of potentially harming his health over time by taking the drugs.

I explained that first and foremost, he needs to manage stress better, as stress creates a negative hormonal cascade in your body that increases cortisol and zaps your Testosterone levels. I suggested that adding meditation to his daily schedule would have surprising benefits for bringing back youthful Testosterone levels. Even yoga could be helpful in helping him to manage his stress better. Who would have thought that something generally seen as "not manly" could have such great benefits for manliness!

What about his sleep? Well, it turns out that Brian was only sleeping 6 hours a night. I explained about a study that I'd read that showed that men who sleep 8 hours a day

have higher Testosterone than men who sleep only 5-6 hours a day. Time to prioritize sleep more my friend!

I also explained that he needs to start paying attention to all of the estrogenic chemicals that he's being exposed to as well. This includes chemicals in shampoos, lotions, plastics, shaving gels, deodorants, toothpaste, chemical sunscreens, household cleaning supplies, and even the xenoestrogens and phytoestrogens in our food supply, which are harming his manhood. It's not realistic to say that you're going to fully avoid all of these chemicals, but it is realistic to do your best to minimize them, so that you're not exposed to so much estrogen mimickers. This book will explain what to avoid and how.

The next thing I explained to Brian is that he can boost his Testosterone levels through the CORRECT forms of exercise, and minimizing the WRONG types of exercise. You see, Brian is one of those guys that rarely lifts weights, and tends to favor jogging as a form of exercise. I explained that long duration cardio actually increases hormones like cortisol, and can even lower Testosterone levels if done for too long and too often. On the other hand, lifting moderately heavy weights that challenge you, and doing intense forms of exercise like sprinting and bodyweight training can jack up his Testosterone to new levels, while burning off that beer gut and love handles, and just making him a more powerful stronger man. What guy doesn't want that?

Lastly, I started getting into nutrition and how his food choices are killing his Testosterone levels and increasing his estrogen levels. For example, although having a beer or two once or twice a week is not a big deal, having 10 beers several nights a week is adding a lot of phytoestrogens to his diet, AND simply giving him a lot of extra empty calories. And that soy milk that he was drinking is adding loads of xenoestrogens AND phytoestrogens to his system, making it that much harder for his Testosterone to get in the right ratio with his Estrogen. And we also have the excess carbs that he was eating, while not eating enough FATS...that's right, every man needs both monounsaturated and saturated fats (and omega-3s) to produce enough Testosterone.

He had been trying to eat low-fat, and this was simply killing his Testosterone levels. I told him to forget about all of those low-fat foods, and don't worry about eating butter or steaks, as long as it is healthy pasture-raised butter or steaks. In fact, go ahead and throw a pat of butter ON your steak...it's delicious and great for your Testosterone! And STOP throwing away the yolks and only eating egg whites...it's the YOLKS that provide the powerful nutrients and healthy fats that help boost your T levels, not the whites.

I also mentioned to Brian while we continued to drive around the golf course that day that there are dozens of unique nutrients, herbs, and other natural substances that have been researched and shown to help boost testosterone levels in men, or decrease stress hormones or estrogen. Adaptogenic herbs are one example of substances that can reduce stress hormones and thereby aid Testosterone levels.

As you can see, in only a matter of a few paragraphs, I've shown you a handful of powerful things you can do to boost your Testosterone levels and reduce stress hormones and estrogen simply through diet changes, nutrient intake and supplements, exercise changes, managing your chemical estrogenic exposure, and stress management.

The rest of this book will be dedicated to going into a LOT more details on all of this so we can help you become the strong, lean, sexually active male that you want to be, with more energy and vigor than you thought was possible once you got older.

My good friend, and someone that I trust for my own health advice, Dr Rick Cohen, MD will guide you through the rest of this manual, with some occasional commentary by me as well. The thing that I love about Rick is that he has the credentials of an MD, but he has more of a Naturopathic mindset. So Rick understands that it's more important to get to the ROOT cause of your problems and heal them naturally, than it is to just throw drugs at a problem, which usually makes things worse in the long term, and causes other health side effects.

Here's to your journey to becoming a better man!

Mike Geary  
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Best Selling Health & Fitness Author  
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# Program Overview

The program been divided into five parts.

## **A Hormonal Primer**

A concise review of the important male hormones and their ideal ratios.

## **Assessing your Hormonal Health**

How to interpret your Personal Hormone Profile and salivary hormone results.

## **The Quick Start**

A “to do” list of the most important steps you can—and should—take to maximize your manhood.

## **The 15 Steps to Hormonal Restoration**

A proven, step-by-step program that will optimize your functional and physiological health.

## **Program Resources**

Links to additional information on a variety of key topics and products.



# How the Program Works

Congratulations on making a commitment to improving your own health and well-being. This program was designed to empower you with the foundational and practical working knowledge you'll need to succeed.

You could spend hundreds of hours and thousands of dollars attempting to find the solution to your hormonal issues and concerns. But thanks to this program, you don't have to!

Years of experience and countless hours of research have been condensed, distilled, and written on these pages for your benefit. When combined with some initiative and a little dedication on your part, this information can lead to positive and lasting changes in your hormonal health and the overall quality of your life.

## To get started here's what you should do:

- Scan the entire program.
- Collect your saliva samples and send them to the lab. (if you haven't already had your Testosterone and Estrogen levels tested recently)
- Complete the **Personal Hormone Profile**.
- Perform one of the [Male Hormone Assessments](#) to assess your baseline hormone levels
- Go to the **Quick Start** section and choose five action steps you can do right away.
- Read through the program more thoroughly while waiting for your salivary results.
- Evaluate your results (*e-mailed to you within 7 business days of receipt by the lab.*)
- Return to the **Quick Start** section and select another set of action steps to address.
- Stay consistent with implementing your action steps and be patient with your progress.
- Continue to reassess and refine your program.

Please feel free to contact us with any questions, feedback, or your personal story of success.

In Good Health,



Rick Cohen, M.D.

# A Hormone Primer

## The Testosterone Problem

**Do you remember having an almost endless supply of energy?** Whatever happened to those days anyway? More than likely, the testosterone that was once responsible for making you feel alive and full of energy isn't quite what it used to be. As men age, their testosterone levels decline. And with that decline comes a loss of physical, mental and sexual energy.

*(Journal of Clinical Endo. & Metabolism; Sept 2007) - As men age, they are more likely to experience symptoms such as lack of sex drive and erectile dysfunction as a result of decreasing levels of testosterone. Other signs include sleep disturbance, depressed mood, lethargy or diminished physical performance.*

**Part of the answer lies in nature's timetable.** Perhaps, at some point, an adjustment of testosterone is necessary to help men channel their energy into an education, a career and a family. However, the typical American male will lose testosterone at an alarming rate of one to two percent each year beginning at age thirty. So a 55-year-old man could—quite literally—be half the man he was at age 30!

*(Circulation; June 2007) - Researchers at the University of California, San Diego School of Medicine conducted a long-term study involving 800 men over an 18-year period and found that those with low testosterone carried a 33 per cent higher risk of death compared with those who had higher levels.*

**But the natural aging process is only one reason for testosterone loss.** High levels of physical and mental stress, along with the negative consequences of a modern lifestyle, are the primary causes. And the problem is getting worse. Very recent studies indicate that the testosterone level of the average male today is 25% less than it was in 1992. The average male estrogen level has increased an alarming 40% during the same time period.

*(Journal of Clinical Endocrinology; Nov 2006) - Over the last two decades, American men have made a number of major lifestyle changes--taking on a greater share of the housework, consuming an ever-widening array of skin-care products and even leaving jobs to stay home and raise the kids while their well-paid wives earn the dough. A study published online in the Journal of Clinical Endocrinology and Metabolism show that today's men are also changing on the inside: having significantly lower testosterone levels than their counterparts 10 or 20 years ago.*

**Yet the vast majority of men have no idea why they are feeling so poorly, or what they can do about it.** The key reason is that most men—and their doctors—are still not fully aware of the global effects that less than optimal levels of testosterone and other important male hormones can have on their health and well-being.

*(AP News) - One in four men is suffering from low testosterone, yet most men do not have their hormones regularly assessed. And even when symptoms of low testosterone do surface they are routinely blamed on stress or the normal aging process.*

**There is hope!** A recently-published medical study suggests that testosterone decline can be prevented. In this study, the serum testosterone levels of approximately 400 men over the age of 40 were evaluated. Researchers concluded that testosterone levels stayed constant among men who were in excellent health. Discovering and correcting the underlying cause (or causes) of your hormonal deficiency or imbalance can significantly improve your physical, mental and sexual health.

*(International Journal of Impotence Research; Sept. 2007) - Restoring healthy testosterone levels increases muscle and strength and decreases body fat in the aging.*

**But there's no such thing as a 'quick fix.'** The desire for immediate results is what prompts many men to seek out pro-hormone and/or prescription hormone replacement therapies. While the use of these products is sometimes a necessity (with advanced age or serious illness), they do nothing to identify or address the causative factors of poor hormonal health. In fact, the use of these products can lead to additional complications which simply make matters worse.

As with most things in life, it takes time to achieve real—and lasting—results. Despite what the makers of many male supplement formulas want you to believe, there is no such thing as a magic symptom solution or quick fitness fix. Improving your hormonal health and physical performance is a step-by-step process that takes time and an inside out commitment to solid, cellular health. Use this program as your guide.

But first, read the next section to learn more about the importance of balancing your male hormones.

## The Male Hormone Balancing Act

### Balanced hormone levels are the key to life-long health.

You've probably heard this before. But do you really know what hormones are? Or why they are so important? Let's answer these questions, once and for all.

Hormones are a bit like a military defense system. They reside or are created in specific glands (the barracks) like the testes, adrenals and thyroid. There, they await messages from your brain (the general), who directs their transmission to your cells (the troops) where a specific function is carried out. Since each messenger has a specific and unique message to transmit, (testosterone, for example, controls growth and repair; the adrenal glands control blood sugar and fat storage; the thyroid regulates energy and metabolism) it is easy to see that the battle can easily be lost when imbalances exist.



For peak mental, physical and sexual health, it is crucial to have a youthful balance of both the anabolic (testosterone) and catabolic (estrogen and cortisol) male hormones. Testosterone, your primary anabolic hormone, provides youthful vitality. It is responsible for promoting growth and recovery of the body at the cellular level. The chief antagonists working against testosterone and its anabolic properties are the catabolic estrogen and cortisol. Catabolic hormones are critical for survival, but can be damaging when their levels are become excessive or imbalanced.

High male estrogen levels will decrease both the amount and activity of testosterone and contribute to weight gain, muscle wasting and a diminished sex drive. Excessive or diminished cortisol (the fight-or-flight hormone) diminishes your body's ability to produce testosterone. High levels of cortisol push the human body into survival mode; blood sugar and fat storage levels increase while muscular strength and energy production decrease.

Let's examine each of the key, male hormones a little closer.

### Testosterone (T): The Fundamental Male Performance Factor

**KEY:** High levels of testosterone are, quite literally, what make you a man and keep you healthy and vital throughout your entire life. The loss of youthful levels of testosterone can greatly diminish your energy, strength, mental, emotional, and sexual function and contribute to fatigue, premature aging, and disease. Luckily, your testosterone level—and overall state of well-being—are within your control!

**The king of male hormonal health is testosterone.** While many men know that a high level of testosterone is needed for sexual performance, far fewer realize that it plays a critical role in almost every aspect of their lives.

**Did you ever wonder why you don't recover as rapidly or have the same stamina you had when you were younger?** Without an optimal level of testosterone, your muscles simply don't have the capacity to generate maximal power or recover fully after a hard, physical effort. Your reaction time, coordination and balance also suffer.

**Age doesn't matter. Your testosterone level is what determines your youthful vitality.** While testosterone levels are high among most men in their late teens and twenties, they begin to decline with age. Most men (and their doctors) accept this as a natural consequence of getting older. And while testosterone levels do naturally decline with age, it is now understood that 95% of all hormonal insufficiencies and imbalances are not caused by age or disease, but by poor cellular health. The greatest contributing factors are counterproductive dietary and lifestyle choices.

**Think of your testosterone supply as if it were a trust fund.** You are genetically gifted with a certain amount of it in your youth. Over time, you make regular and ongoing withdrawals until one day the bank sends you notice that your funds are running low. This notice might arrive in the form of unexplained fatigue, poor recovery, fat gain, muscle loss, low libido, irritability, depression, and high blood pressure. Aging professional athletes often begin to exhibit reduced foot and hand speed, slower recovery, loss of reaction time, and decreased visual acuity and balance.

Typically, these issues begin to surface in the **early thirties**. Their onset can be quite sudden and result from a major life stressor, injury, or illness.

If you're like most men, you simply assumed that the testosterone in your savings account had no limits and could not be affected by an unhealthy diet, chronic lack of sleep, or daily life stress. There was no consideration given to the intake of foundational nutrients such as vitamin D3, omega 3 fatty acids, or antioxidants. You had no problems making regular withdrawals, but never got around to making any deposits.



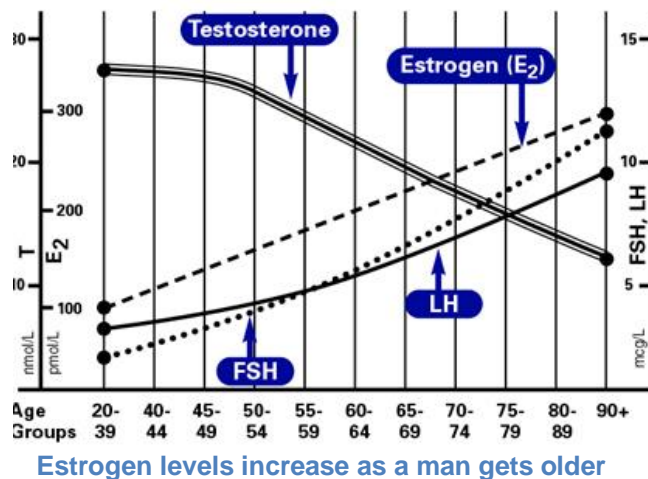
The task you are now charged with is to accept responsibility for managing your hormonal bank account with the same amount of careful and focused attention your financial one receives. You must acknowledge that healthy hormones levels cannot be obtained through high-interest loans (testosterone injections and creams). Rather, you must learn to make better investment (dietary and lifestyle) choices. By doing this, you can replenish your hormonal account—and live off the interest for the rest of your life!

## Estrogen (E): Not for Women Only!

**KEY:** While some male estrogen is important, especially for a healthy sex drive, chronically-elevated estrogen levels will decrease your testosterone, increase your body fat content, and set the stage for a variety of serious health concerns.

The vast majority of men are surprised to learn that estrogen is present in their bodies and/or that this “female” hormone contributes positively to their long-term health and well-being. Male estrogens are naturally produced in small amounts as a by-product of testosterone metabolism or conversion. At these low levels, male estrogen is essential for a solid libido, optimal brain function, health heart, and strong bones.

Unfortunately, elevated male estrogen levels can lead to reduced strength and lean muscle mass loss; to excessive body fat, particularly in the chest and around the midsection; to hair loss, and to an enlarged prostate. Carrying more visceral, abdominal fat greatly increases your risk of developing diabetes, heart disease and cancer. And if all this weren't bad enough, a high estrogen level will interfere with the body's ability to produce testosterone. It will also decrease the all-important levels of bioactive or free testosterone.



The stress of modern life, use of medications and alcohol, intake of estrogenic compounds in processed, packaged foods (and even our water supply), exposure to environmental contaminants and excess body fat (which stimulates the production of even more estrogen) are the reasons why many middle-aged men have estrogen levels higher than those of most middle-aged women!

**Note:** There are a number of different types of male estrogen. Estradiol is 80 times more potent than any other form; therefore, it is the one most regularly assessed.

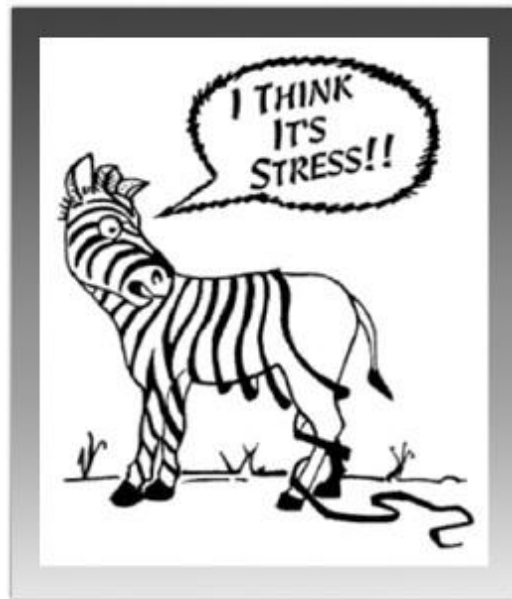
## Cortisol: The Stress Hormone

**KEY:** Stress will destroy your testosterone and your vitality. You must learn how to assess and manage the stressors of daily life.

Stress is an unavoidable aspect of modern life. And most of us are under tremendous amounts of stress, often more than we realize. Much of this stress is constant and repetitive. Athletic training and/or competitive racing can also result in excessive levels of stress.

The body logically responds to stressors by producing a stress hormone called cortisol (in the adrenal glands), which allows your body to functionally adapt. But the human body was designed to adapt to intermittent, short-term increases in cortisol to deal with life-threatening issues, illness, and injury. It is not well equipped to handle the chronic, long-term stress that has become a normal, even integral, part of modern daily life.

Cortisol levels are naturally elevated in the morning and lower at night. This hormonal rhythm allows you to be prepared for the stressors of your waking life while settling down to sleep at the day's end. **A low morning cortisol level will cause poor resilience and fatigue and high levels at night will make it difficult to sleep and recover.**



Chronically-elevated levels of cortisol are extremely catabolic (destructive) and are one of the leading causes of accelerated aging. This is the reason why stress ages us. An increased ratio of the catabolic cortisol to the anabolic testosterone is characteristically found within the aging body. When high cortisol levels are present in a younger person, the symptoms of pre-mature aging are apparent—reduced mental acuity, increased abdominal fat, loss of lean muscle mass, decreased immunity and greatly increased risks for heart disease, diabetes, Alzheimer's disease, and cancer. Low levels of cortisol can be equally harmful, contributing to delayed recovery from physical exertion, anxiety, depression, blood sugar imbalances, weakness, and fatigue.

When excessive, stress hormones (including cortisol) can lead to unexplained weight gain. This is sometimes referred to as the "famine effect." Despite an appropriate food intake, the body interprets prolonged stress as a threat of famine and begins to hoard calories. When a high-stress lifestyle is combined with a low-fat, high-carbohydrate diet, the end result is a powerful hormonal imbalance that makes weight gain (or the inability to lose weight) inevitable.

# The Important Male Hormone Ratios

As previously discussed, high testosterone levels are anabolic; they are characterized by youth, vitality and a strong recovery capacity. High cortisol and estradiol are catabolic; they are characterized by aging, physical breakdown, and impaired growth and recovery. Let's take a quick look at two pivotal male hormone ratios.

## Your Masculine Ratio: The Testosterone to Estradiol (T/E ratio)

Your ratio of testosterone to estradiol (T/E ratio) is a critical factor influencing your male health and vitality. So in addition to determining your baseline testosterone level, it is equally important to know your estradiol levels. Both levels should be jointly and continually assessed. As your testosterone level decreases and estradiol level increases, your T/E ratio will decline. A high estradiol level can be a serious road block on your path toward optimal health—even if your testosterone level is high.

If you want to look, feel, and perform your very best, it is important to take action—restore and re-balance your hormonal system by achieving and maintaining a salivary testosterone to estradiol (T/E) ratio of greater than 40:1.

## Your Strength and Recovery Ratio: The Testosterone/Cortisol Ratio

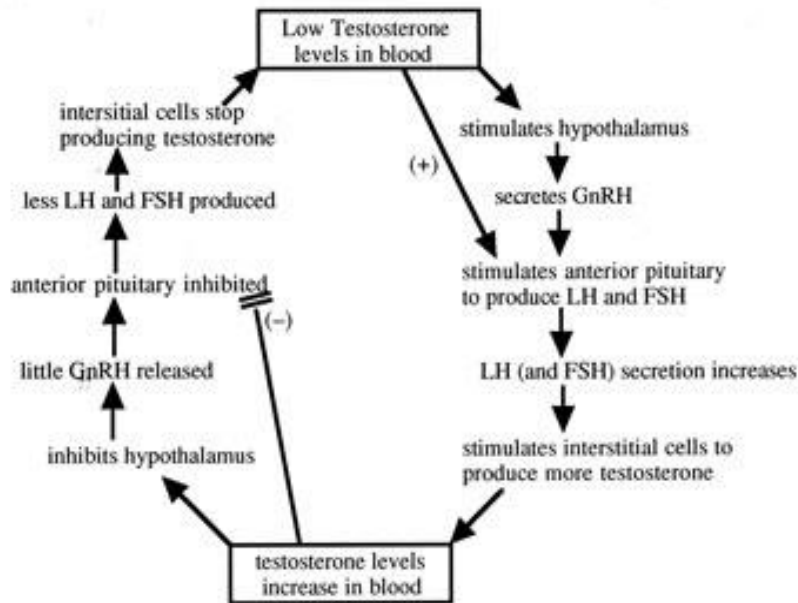
Your ratio of testosterone to cortisol (T/C) is another critical aging and performance maker. Whether you consider yourself a physical, mental, or sexual athlete, it will be difficult if not impossible to reach peak performance without a positive testosterone (anabolic) to cortisol (catabolic) ratio.

Here's the good news: Assessing and monitoring your T/C ratio isn't a necessity because when you take steps to optimize your T/E ratio, you will automatically be optimizing your T/C ratio, too!



## Learn More: Testosterone Production

The production of testosterone is an intricate chain of events that begins in the Hypothalamus, the part of your brain that is responsible for a number of ground-level, physiological processes such as your internal clock and autonomic nervous system. You can view the hypothalamus as the thermostat of testosterone production.



Throughout the day, based on the feedback it receives from the body, the hypothalamus secretes controlled pulses of gonadotropin-releasing hormone (GnRH) to the pituitary gland signaling it to release luteinizing hormone (LH). LH then travels through the blood stream to the testes where it stimulates the Leydig cells to create and release testosterone.

This newly-created testosterone then travels into the blood to your cells where it binds to a cell receptor. It is this binding that triggers chemical actions in the cell that promote function, growth, and recovery. It is important to know that only one to three percent of testosterone that is released from the testes is actually bioactive and free to stimulate the cell receptors. The majority of testosterone is inactive as it is bound to a protein in the blood called sex-hormone binding globulin (SHBG).

The path of testosterone does not stop there. Some testosterone is metabolized in the prostate and testes to a super testosterone called dihydrotestosterone (DHT). DHT is a more powerful androgenic version of testosterone that travels to your cells stimulating male sexual characteristics and function. The remaining testosterone is metabolized in the liver and fat cells to estrogen. Along with being needed for optimal health and libido, male estrogen has the important task of providing negative feedback to the hypothalamus. This means when estradiol levels are high, signaling decreases and testosterone production goes down.

Your body also regulates your testosterone by adjusting the levels of SHBG therefore adjusting the amount of free or bioactive testosterone. Both reductions in testosterone and increases in estrogens levels will lead to increases in SHBG. So even if you have lots of testosterone, elevated SHBG levels will cause low bioactive (free) testosterone. And vice versa—you can have a low total serum testosterone, but if your SHBG is low, you can have relatively high levels of free testosterone.

The same factors that promote overall cell health will, in many cases, normalize SHBG levels and enhance free testosterone. These include optimal amounts of whole food micronutrients and antioxidants, vitamin D3, omega 3 fatty acids, amino acids; and a toxin-free diet and environment.

**Why the science lesson?** It is important to know that there are many points along the testosterone physiological chain (the hypothalamus, pituitary, testes, blood proteins, cells and/or liver) that can become disrupted and effect testosterone production and activity. **This is why you just can't just add more testosterone through injections, pills or creams.** If you do that, it negatively affects some point on the hormonal chain.

If the problem is not one of production in the testes but of too much SHBG, a cellular receptor issue, or liver metabolism, it is not going to solve the problem and can actually make things worse! **When given the proper tools, the human body has the powerful ability to heal itself.** The best way to remedy your hormonal issue is to build your body the physiological foundation it needs to function fully.

This is covered in much more detail in **Take Action: Testosterone: What Can Go Wrong?**

# Assessing Your Male Hormone Health

## And the need for a comprehensive solution

Over the last 50 years, the U.S. government and corporate establishment have vigorously promoted a low-fat, high-carbohydrate diet, and unlimited amounts of aerobic activity as being healthy (they are not). Little to no consideration has been given to stopping the flow of not only toxic foods but the poisonous, industrial by-products polluting the environment. As a result, our hormonal health has deteriorated at an alarming pace.



Sperm counts have declined dramatically world-wide over the last 30 years

Consider the following:

- The average male **testosterone level is 25% lower** than it was 20 years ago.
- The average male **estrogen level is 40% higher** than it was 20 years ago.
- Rates of male infertility are skyrocketing, and expected to double during the next decade.
- Diabetes (obesity + diabetes) affects more than one billion people worldwide, including 100 million Americans and 50% of all Americans over the age of 65.
- Statistics indicate that 4 out of every 10 deaths in the U.S. can be attributed to heart disease; the number is projected to double within the next 50 years.
- Depression, immune dysfunction, gastrointestinal disease, and cancer rates are all steadily rising.

While conventional medicine wants you to believe that all of these diseases are unrelated conditions—which is a work of fiction created by the pharmaceutical industry (and perpetuated by the medical establishment) to sell more drugs—the truth is that they all share a common origin: our modern lifestyle. Poor dietary choices and resulting nutrient deficiencies, stress, lack of sleep, too little or too much exercise, exposure to toxic chemicals, and the use of medications, both prescription and over the counter, have all played a direct role in the downfall of our health and hormones.

**Low testosterone is often overlooked.** Our disease-oriented, pharmaceutical-driven medical system only recognizes and provides restorative therapies for the one percent of men who suffer from hypogonadism—extremely low levels of testosterone. And since there are no pharmaceutical options for the millions of men suffering from mild to moderate reductions in testosterone and/or elevated levels of estradiol, they are not offered any restorative treatment. Even if your doctor was on board with offering a treatment, his or her testosterone replacement plan is, at best, a Band-Aid®.

Because it is an artificial intervention, conventional testosterone replacement therapies are frequently not effective. **They do nothing to address any underlying, physiological imbalances; their sole purpose is simply to mask symptoms.** They are not easily utilized by the body, which will eventually become resistant to their intended effects over time. Those who use conventional testosterone replacements are subject to the inevitable side effects—the body becomes susceptible to more and bigger imbalances and it becomes completely incapable of producing its own supply of testosterone.



Before you decide to pursue hormonal replacement, ask yourself: “Do I really want to rely on artificial hormones for the rest of my life?” If not, it’s time for you to take charge of your own hormonal health. You are in the driver’s seat! Leave the disease and medications to those who are less educated (including your doctor most times) and opt for the common-sense alternative—a 100% natural, scientifically-proven step-by-step program that will take you far beyond the superficial management of your symptoms.

**The first step?** Assessing the current status of your hormonal health. Grab hold of the steering wheel and read on!

## Your Personal Hormone Profile

**The only way to improve something is to measure it.**

Periodic hormonal assessments should be a routine part of your self-care program. Due to the changes in hormones that naturally occur over time, it is wise to determine your baseline levels of both testosterone and estradiol, ideally in your twenties.

Follow-up testing every two to three years is recommended—sooner if symptoms related to reduced testosterone should surface. If symptoms do exist, it is important to re-assess your hormone levels every three months until their optimal balance is restored. Continue to assess yourself on an annual basis to make sure that you're staying on track.

In this program, you will use both **subjective signs** (the way you feel and perform) and **objective signs** (your salivary T/E hormone ratio) to determine your current hormone baseline as well as progress in restoring your hormonal health and well-being.

Let's get started.

### Could you be suffering from low testosterone and not even know it?

Stop for a moment and think about how you really feel.

1. Do you feel like you're just not the man you used to be?
2. Do you find yourself living a successful life without any energy to actually enjoy it?
3. Do you often feel depressed, irritable, or unmotivated?
4. Do you frequently feel overwhelmed due to excessive stress?
5. Do you have difficulty concentrating and/or remembering things?
6. Has your sex drive declined?
7. Do you have trouble having or maintaining an erection?
8. Do you frequently feel fatigued?
9. Are you carrying around any extra weight, particularly around the mid-section?
10. Do you have difficulty gaining or maintaining muscle tone?
11. Does it sometimes feel that the harder you work out, the worse you feel?
12. Do you have difficulty sleeping or fall sleep after dinner?
13. Do you smoke, drink, or take medications regularly?

If you answered “yes” to more than two of the questions above, you most likely have a hormonal imbalance. **And don’t let anyone convince you that this is normal, or a “natural” part of the aging process.**

For further insights into your hormone status, complete the **Personal Hormone Profile**. This comprehensive survey is a very important part of the program. By using the **Personal Hormone Profile** every two weeks to track your progress, you will be able to accurately evaluate the areas you have improved upon, as well as those that are in need of more time or additional attention.

This is important since once men begin a hormonal restoration program, many quickly forget how poorly they used to feel. Use the survey as a measurement tool that will provide you with more objective, quantifiable feedback for evaluating your personal, restorative progress.

## Your Salivary T/E Hormone Ratio

Chances are, you’re no longer the impenetrable man you were in your twenties. None of us are.



Just how compromised is your hormonal health? All it takes is a simple saliva sample to easily—and accurately—find out. No doctors, no appointments, no lab visits, no needles! You can collect your sample and receive your results in the comfort and convenience of your very own home. [Order your salivary hormone assessment kit here](#) unless you’ve recently had your hormone tests done by your doctor.

For the most accurate results, please read and closely follow the directions in the **salivary hormone assessment kit** as the best way to measure your numbers without needing doctor appointments and lab visits. You will perform this assessment prior to beginning the program and then every three to four months until you have obtained optimal hormone levels, or have achieved a perfect score on your [Personal Hormone Profile](#) and are 100% satisfied with how you look and feel.

## Evaluating your Results

Compare the results of your salivary hormone assessment to the ranges below:

Testosterone (pg/ml)	Estradiol (pg/ml)	T/E Ratio
<b>Optimal &gt;80</b> Borderline 55-80 Low 35-55 <b>Deficient &lt;35</b>	<b>Elevated &gt;2.0</b> Normal 1-2 Possible Deficient <1	<b>Optimal &gt;40</b> Borderline 30-40 Low 20-30 Deficient <20

### The T/E Ratio

Very simply, the ratio of testosterone to estradiol present in your saliva should be greater than 40:1 or forty parts testosterone to one part estrogen. All other things being equal, the higher your T/E ratio, the more manly you'll look and feel. The further you should fall below the 35:1 ratio (especially if your estradiol levels are elevated), the more likely you'll experience testosterone-related issues such as low sex drive, problems achieving and/or maintaining an erection, excessive abdominal fat, fatigue, loss of motivation and ambition, poor memory, and mood imbalances.

**While the T/E ratio is important, don't get too hung up on the numbers.** It's best to think of your T/E ratio less as a number that needs to be corrected and more as an indicator of your overall vitality quotient. Think of it more like a warning light on the dashboard of your car that's signaling a problem in need of further investigation. While you should strive to achieve and maintain an optimal T/E ratio, the more important variables to focus on are how you look, feel, and perform. The real proof will lie in the qualitative improvements indicated by the results of your [Personal Hormone Profile](#).

The fact of the matter is that your hormonal needs and requirements are completely unique. This means that you may do just fine with a T/E ratio of 30:1 while another man may require a T/E ratio of 50:1 for peak health and performance. In addition, the healthier your cells are, the more sensitive their receptor sites will become and the less testosterone you will need. If your cells aren't very healthy, sometimes no amount of testosterone will get the job done. This is why testosterone creams and injections are so functionally ineffective, even when optimal hormone levels are restored.



#### Testosterone <35 pg/ml

This is a sign of testosterone deficiency. It indicates either very high levels of SHBG and/or a testosterone production problem. If your estradiol levels are within the normal range, you seek out a medical evaluation to rule out a pathological issue such as pituitary tumor, varicocele, trauma, or other

disease state. If your estradiol level is elevated, you may want to address this first to see if a reduction will subsequently raise your testosterone.



### **Estradiol >2.0 pg/ml**

This is a sign of excess estrogens. The lower your testosterone level, the greater this problem becomes. Even if your testosterone level is in within a healthful range, a high estradiol level will contribute to the onset of a variety of longer-term deficiencies and imbalances. It is essential to keep your estradiol level in check and under control.

**Ready to get your engine going? Keep reading!**

## **Learn More: The Benefits of Salivary Hormone Assessments**

Salivary hormone assessments provide you with the best way to easily, accurately, and inexpensively monitor your male hormone health. It has been shown in multiple studies to be a reliable assessment for male hormonal health.

*(Clinical Endocrinology: Nov 2007) - Salivary testosterone is a harmless and reliable marker of testosterone bio-availability. The results of this study support the inclusion of this bio-marker as a noninvasive approach in the evaluation of hormonal status.*

**There are a number of advantages to salivary hormone assessments.**

Because the collection process is simple and painless, it is quite easy to collect multiple samples for assessing your hormone levels throughout the course of a typical day. This is important since a man's testosterone levels can be as much as 40% higher in the morning than they are at night (the physiological reason for your morning erection) and levels vary constantly throughout the day. By polling multiple samples taken during the day, accuracy improves.

**Salivary hormone testing** is both cost and time effective. Not only is it less expensive, but since sample collection can be done at home with results provided by e-mail, there are no additional payments or waiting time—the norm for most doctor's visits. Just collect your samples in the appropriate tube and mail them directly to the lab. Salivary samples are inherently stable and can be sent by regular mail.

Perhaps most importantly, it is essential to understand that inactive, blood-bound hormones do not filter into the saliva. Therefore, salivary hormone assessments provide the most accurate, physiological snapshot of your body's functional, hormone activity. Salivary assessments measure the all-important free or bio-available hormones—those that are actually delivered to and act upon the cell receptor sites.



You can [order your quick and easy salivary assessments here](#) to save you a doctors visit.

**Serum assessments**, on the other hand, provide for a measurement of total testosterone only. Since a total testosterone count includes both the free and bound forms of testosterone, end results can be misleading. As you may recall, only one to three percent of the testosterone in the blood is actually bio-available or capable of being used by the body. The other 97 to 99% is inactive; it is bound to circulating proteins and unable to bind with cellular receptors. Because of this, many men who are suffering from low testosterone may have relatively normal levels of total testosterone. Due to a high SHBG (or other hormonal level), however, their free testosterone may be depleted.

Having said this, if your level of free (salivary) testosterone is low (less than 30 pg/ml), you should consider including a total (serum) assessment to your hormonal evaluation plan. Since both a low free and a low total testosterone level will indicate that your specific problem is one of production, the underlying cause lies either in the brain (errant signaling from the hypothalamus or pituitary gland), or in the testes (where testosterone is manufactured).

## Achieving Optimum Hormonal Health



You should know by now that your testosterone level is inextricably linked to your overall health, longevity, and vitality. And that your entire hormonal chain is only as strong as its weakest link. One of the most important things this program can do for you is to provide you with the knowledge and direction you need to identify and strengthen your hormonal weak links. Many of the simplest decisions you consciously and unconsciously make each day can have a

powerful effect on either strengthening or weakening your male hormone system.

The **Quick Start** guide on the next page will provide you with a series of action steps you can take to maximize your cellular health and restore your hormonal health. Most of the action steps require no real explanation. (Please print the guide for easy reference). Specifics on these action steps and more are provided in the **Step-by-Step Program** section.

While many of the recommendations may require some habit changes, none of them should be overly taxing. But don't try to tackle them all at once. Pick a few of the easier ones to get started. Challenge yourself by tackling one or two more after an initial adjustment period at regular intervals.

Keep in mind that this is not a race. Achieving optimal hormonal health is a progressive process that will take some time. Know that each and every step you take forward will be contributing to your cumulative, long-term health. You will begin to look, feel, and perform a little better each day as you begin to take charge of your hormonal health—once and for all. By the time you have reached the end of your action item list (whether that’s in six weeks, six months, or even six years) your life will be changed—for the best.

Remember, there's no such thing as a quick fix or easy way out. As the old saying goes, “Rome wasn’t built in a day.” Stay the course and stick with the program. Be patient with yourself and with your body; give it time to adapt and respond to the health-enhancing changes you are implementing. When you reach the finish line, here’s a partial list of the things you can look forward to:

- Improved athletic performance
- Decreased workout recovery time—less joint pain, stiffness and muscle soreness
- Increased lean muscle mass and decreased body fat
- Enhanced libido and sexual function
- Feeling calmer, more stress-proof, and more positive about your life

**One brief reminder:** The goal of the program is optimal cellular health—the essential requirement for maximal manhood.

## The Quick Start Guide

### **Sleep and recover fully.**

\*Get eight solid hours of sleep every night. Block out all light (even clocks) to create total darkness.

\*Turn off all electronics one hour before bedtime.

\*Slowly take ten, deep nose breaths twice daily. Inhale for a count of six, hold for four, exhale for eight)

\*Get up from your chair at least once every hour during the day.

\*Take walks barefoot on the grass or sand. This is known as “earthing” and is increasingly becoming known for having health benefits.

\*Lie in the sun for 15 minutes without sunscreen, with your legs, arms, and torso exposed. This

is important for your vitamin D levels, which also directly affect your Testosterone and other hormones.

### **Avoid toxins.**

- \*Replace your conventional toiletries with organic, paraben-free versions.
- \*Eat only organic varieties of the “dirty dozen” foods.
- \*Strictly avoid eating soy and all GMO products—especially corn, soy and canola.
- \*Avoid hard liquor as much as possible.
- \*Limit your wine and/or beer intake to four servings weekly, and no more than two per day.
- \*Keep your powered cellphone out of your pants pocket. If you haven’t heard the news that having a cell phone nestled up next to your testes can decrease your T levels and your sperm count, read this article to see: <http://www.truthaboutabs.com/cell-phone-damages-crotch.html>
- \*Wear boxer shorts, not briefs to eliminate any restriction around your testicles, and so that they don’t get overheated by being tugged up too close to your body for too long.

### **Practice pleasure.**

- \*Have sex at least twice a week.

### **Move like your primitive ancestors—lift heavy things, move fast, or walk slow**

- \*Perform at least four minutes of high-intensity cardiovascular intervals twice a week.
- \*Perform at least four minutes of high-intensity squats or pushups twice a week.
- \*In the weight room, lift heavier weights fewer times as a general rule. Choose a weight that challenges you for anywhere from 3 to 8 reps per set. This does more for your testosterone than doing a weight that you can do for 20 reps.
- \*Take a longer walk, hike, swim or easy bike ride a few times weekly.
- \*Limit any medium-intensity cardiovascular workouts to no more than 30 minutes twice weekly. Doing jogging for hours at a time, or bike riding for hours at a time can be bad for your hormonal balance, and particularly your T levels.

**Mike's note:** *Walking or sprinting are both better for your hormones than jogging. Instead of jogging, I like to do all-out wind sprints at a soccer field twice a week. I also like to go on a casual hike in the woods or up a mountain several times per week. These are both beneficial for your hormones, whereas long duration medium intensity jogging does more harm than good, to both your hormones and your joints.*

*For people that are in good enough health to do "wind sprints" (this just means 100% intensity sprints, or running as fast as you can across a field), doing this sprinting exercise a couple times per week has plenty of research showing improvements in growth hormone and Testosterone. I think the results of sprinting on body composition can be clearly seen by observing athletes that sprint vs endurance athletes...After all, I'm sure you've noticed that world class sprinters are WAY more jacked than skinny weakling marathoners!*

### **Challenge your dopamine.**

- \*Find something you love to do and do it almost every day (even if it's only for 15 minutes).
- \*Take some safe exciting risks on a regular basis.
- \*Compete in a sport, play a game, or accept a new challenge.

### **Nourish your body.**

- \*Replace your synthetic multivitamin with an organic, whole-food concentrate.
- \*Get 20 minutes of mid-day sun and/or take 4000 iu of vitamin D3 daily
- \*Take 2400 mg of EPA/DHA from a pure, triglyceride fish oil source.
- \*Have one "power drink" daily (look for the recipe in the **Complete Program** section).
- \*Have one tablespoon of coconut oil and one tablespoon of olive oil every day.

### **Get lean by eating REAL food.**

- \*Eliminate all processed sugars or artificial sweeteners including corn syrup, fructose or fruit juices.
- \*Stop eating wheat.
- \*Eat broccoli, cabbage, cauliflower, Brussels sprouts, and/or button mushrooms every day. All of these superfoods have science showing they can help your T levels, or help reduce estrogens, both of which are beneficial for your body.
- \*Eat beets, kale, chard, spinach, pomegranate, blueberries, and/or dark chocolate (over 75%) every day. These contain powerful antioxidants and are also good for your nitric oxide levels.

# The Step-by-Step Program

While the **Quick Start** program provides you with the key action steps, use the following **Step-by-Step Program** including the additional **Learn More** and **Take Action** sections to comprehensively address your cellular health and male hormone needs.

Step 1: Stop Poisoning Yourself

Step 2: Get Lean

Step 3: Adopt a Testosterone-Enhancing Diet

Step 4: Train your Brain

Step 5: Get Sexually Aroused.

Step 6: Incorporate Vigorous Activity

Step 7: Rest and Recover

Step 8: Support your Health with Foundational Nutrients

Step 9: Evaluate your Progress

Step 10: Use Supportive Hormonal Formulas

Step 11: Fine Tune your Nutritional Status

Step 12: Identify the Underlying Cause of Your Hormone Imbalance

Step 13: Seek Appropriate Medical Care

Step 14: Learn More

## Step One: Stop Poisoning Yourself

While it isn't possible to protect yourself from all of the environmental toxins you're exposed to, you can significantly reduce their damaging effects by making choices that will lessen your toxic load. Make a commitment to controlling the things you can. Your cells and hormones will thank you.



**Moderate your alcohol intake.** If you want to maximize your testosterone production, fat loss, and muscle gain, cut down on your drinking. The regular, over consumption of alcohol will directly lower your T/E ratio by inhibiting testicular testosterone production, increasing estrogen production and reducing your liver's ability to remove these excessive estrogens. In addition, chronic alcohol use leads to zinc depletion, which can further lower your testosterone levels.

Minimize hard alcohol and limit your intake of beer and wine to four servings weekly with no more than two servings on any given day. If you have elevated estrogen levels and excess belly fat, you should consider completely eliminating alcohol for a while until both of these complicating factors are under control.

### **Minimize your exposure to environmental estrogens.**

Conventional personal care items are loaded with estrogen-mimicking, endocrine-disrupting, and reproductive-killing toxins.

Toss out your toxic hair and body care products and replace them with organic, chemical-free alternatives. In addition, you should avoid dental care products that contain fluoride; stop using and exposing yourself to pesticides (choose organic foods whenever possible) and the estrogenic chemicals that leach into your food from plastic bottles, storage containers, and BPA-lined cans.

### **Minimize your intake of processed foods.**

Fine-tuning your diet for optimum cellular health can make a significant difference in how you look, feel, and perform. Unfortunately, the quality of our food supply is poor and in a continual state of decline. Grocery store shelves are packed with products high in refined, processed, and artificial ingredients.

Your first step should be to avoid eating substances that masquerade as food. These include all genetically-modified foods (especially soy, corn, and canola products), hydrogenated oils, pasteurized dairy products, refined sugars (including those found in Gatorade® and other

energy drinks), refined flours, artificial sweeteners, and preservatives. Remember—real food doesn't come in plastic containers and boxes.

### ***Choose organic foods.***

Many pesticides are endocrine disruptors. Some mimic estrogen or testosterone and take over cellular receptor sites while others interfere with the chemical pathways responsible for the formation and/or delivery of testosterone and/or estrogen.

Eating organic foods in an effort to minimize your pesticide exposure is always a good idea, but it's an absolute necessity when it comes to consuming those known as "dirty dozen."

The dirty dozen includes:

- apples,
- celery,
- bell peppers,
- peaches,
- strawberries,
- nectarines,
- grapes,
- spinach,
- lettuces,
- cucumbers,
- blueberries,
- and potatoes.



Kale and green beans also should be organic. Organic fruits and vegetables will be labeled with a sticker beginning with the number nine; conventional foods with the number four.

### ***Eliminate excitotoxins.***

These food additives are powerful chemicals that cause free radical damage to the brain and nervous system, which should provide you with more than enough motivation to avoid eating processed foods! The two most common excitotoxin sources are MSG (monosodium glutamate) and artificial sweeteners such as Aspartame (Nutrasweet), which are both found in one form or another in almost all processed foods. Among many other things, the side effects of excitotoxins can range from sleep disturbances and attention deficit to anxiety, depression and low testosterone.

Eliminate processed foods, which almost always contain excitotoxins, from your diet. Avoid eating anything that contains glutamates, hydrolyzed yeast extracts, textured proteins as well as

ingredients that are nebulously labeled as “seasonings” and “natural flavors.” Avoid all artificial sweeteners including Aspartame, Acesulfame-K and Sucralose.

### ***Say no to soy!***

Still considered by many to be a “health” food, the most recent research shows that soy is nothing of the sort. Unfermented soy products have undesirable effects on the male body. Soy contains phytonutrients that mimic estrogen. They also contain toxic compounds that interfere with thyroid function and the body’s ability to use minerals, protein, and oxygen. Furthermore, almost all commercial soybeans are genetically-modified and grown on farms that use toxic pesticides and herbicides. Last, but not least, the demand for soy products is causing devastating, world-wide damage to old-growth rainforests.

If you want to read more about why most soy products are so bad for you, read this article: <http://www.truthaboutabs.com/soy-foods-make-you-fat.html>

### ***Eliminate unnecessary OTC and prescription medications.***

It is rare to come across a pharmaceutical agent that doesn’t have some negative effect on male hormone levels and/or sex drive.

The list is rather lengthy, but includes such commonly-taken medications as Proscar® and Propecia®; Celebrex® and NSAID’s (such as ibuprofen); acetaminophen (Tylenol®) and aspirin; the statin class of cholesterol lowering drugs; many blood pressure medications; SSRI anti-depressants; Ritalin® and Adderall®; anti-fungal medications, and Tagamet®.



Consult with your doctor regarding a trial elimination of any lifestyle or preventive prescriptions. By following this program and improving their cellular and hormonal health, most men feel dramatically better and no longer have a need for these types of medications. Even when a specific health concern remains, the use of nutritional supplements may offer a safer—and potentially more effective—solution.

### ***If applicable, discontinue the use of marijuana.***

The regular use of marijuana can have some potential detriments to your hormonal system; it will lower your testosterone levels, compromise your fertility, and elevate your cortisol (stress



hormone) level. The hormone-disrupting effects of a singular incidence of use can last for more than 24 hours.

If you're currently using medical marijuana for certain health conditions, don't discontinue use just for your T levels. In some cases, the medical uses for marijuana can have significant benefits for specific health cases.

The upshot is occasional use of marijuana is probably fine for somebody with healthy lifestyle, diet and strong T levels. They may have a short 24 hour drop in hormones and experience a drop in libido or morning erection but they should recover fine and may even benefit from the stress release..

But frequent use in somebody who is already having T related issues is a huge load on the hormonal system and needs to be eliminated.

The research team found that "a reanalysis of existing data established that **testosterone levels are depressed** both after smoking one marijuana cigarette and after intravenous infusion of delta-9-tetrahydrocannabinol, a pharmacologically active component of marijuana". [1] The same study concluded that it would take at least 24 hours for testosterone levels to normalize after marijuana use. (NOTE: It's not just the smoke - an IV will do it.)

1) J Theor Biol, 1983 Oct 21, 104(4):685-692, "Effects of marijuana on testosterone in male subjects"

Another study found that not only was testosterone decreased after short term marijuana use, but **leutenizing and follicle stimulating hormone** were lowered as well. [2] And just to add to the endocrinological misery, the arch-villain and stress hormone **cortisol was raised** as well in this same study. There are also studies in animals and humans that strongly indicate that marijuana blunts **growth hormone** response as well.

2) Pharmacol Biochem Behav, 1986 Jun, 24(6):1749-54, "Acute effects of smoking marijuana on hormones, subjective effects and performance in male human subjects"

There is reported evidence of **erectile dysfunction** among chronic marijuana users. This is undoubtedly partially due to the lowered testosterone. However, the other reason was discovered by one study that showed marijuana effected Nitric Oxide and summarized by saying, "We conclude that early endothelial damage may be induced by chronic cannabis use (and endocannabinoid system activation)". [3]

3) Intl J of Impotence Research, 2008, 20(6):566-573, "Early endothelial dysfunction as a marker of vasculogenic erectile dysfunction in young habitual cannabis users"

The **components of marijuana smoke have affinity to the estrogen receptor**, an association with gynecomastia is plausible but has not been convincingly demonstrated". [4]

4) Endocrine Effects of Marijuana, Todd T. Brown, MD, and Adrian S. Dobs, MD, MHS

Animal studies show that **marijuana use shrinks the testes.**

5) Eur J Pharmacol, 1974, 26:111-114; Endokrinologie, 1977, 69:299-305

One more recent study found that marijuana induces just as much cell toxicity and DNA damage as cigarette smoke. [6]

6) Chem. Res. Toxicol., Article Publication Date (Web): July 17, 2009, "The Genotoxicity of Mainstream and Sidestream Marijuana and Tobacco Smoke Condensates", Rebecca M. Maertens, et. al.

Marijuana has also recently been flagged as particularly dangerous for young people because it decreases serotonin and increases norepineprine. While these are not sex hormones like testosterone, these can alter mood negatively and, through prolonged use, may permanently alter anxiety levels and reaction to stress. [7]

7) Neurobiology of Disease, Dec 2009, "Chronic exposure to cannabinoids during adolescence but not during adulthood impairs emotional behaviour and monoaminergic neurotransmission"

Marijuana does not just affect your gonads - studies have also shown that it attacks the brain. Researchers have also found that heavy marijuana users have 7% and 12% smaller amygdala and hippocampuses, respectively. [8]

8) <http://www.physorg.com/news131644196.html>

Researchers may have found one of the reasons that marijuana lowers testosterone: it decreases dopamine over time. [9]

9) <http://www.medicaldaily.com/articles/17065/20130702/long-term-marijuana-use-alters-brains-reward.htm>

<http://www.sciencedirect.com/science/article/pii/S0041008X06000093>

<http://www.ncbi.nlm.nih.gov/pubmed/6296360>

<http://www.ncbi.nlm.nih.gov/pubmed/6090909>

<http://www.nejm.org/doi/pdf/10.1056/NEJM197404182901602>

<http://www.sciencedirect.com/science/article/pii/0091305786905150>

<http://www.sciencedirect.com/science/article/pii/0022519383902552>

<http://www.tandfonline.com/doi/abs/10.1080/02791072.1982.10471911?journalCode=ujpd20&#.VeZQrvZVikp>

***Turn off your cell phone when carrying it in your pocket.***

Recent studies have shown that men who carry a cell phone in their pants pocket have lower testosterone levels and reduced sperm counts. Don't carry a powered cell phone in your pocket

for any period of time. Toss it in a backpack or strap it to your arm. Better yet, turn it off when it's not in use or make a place for it on the top of your desk or dashboard.

Again, you can read more about the studies, etc regarding cell phone use and T levels and sperm count here:

<http://www.truthaboutabs.com/cell-phone-damages-crotch.html>

### ***Get rid of your “tighty whities.”***

Your testicles need to be at about 2 degrees cooler than the rest of your body to produce testosterone proficiently. This is why they hang down from your body. Consider a switch to boxers over briefs, avoid wearing tight pants on a regular basis, and indulge in a hot bath only on occasion.

Try this simple trick for stimulating testicular production: Keep a wide-mouthed cup or jar in your bathroom and take it with you into the shower. Just before the shower ends, turn the water down to the coldest setting, and fill the container. Submerge your testicles into the cup for approximately 60 seconds. Add an ice cube or two if you really want to make sure this technique is effective at stimulating your testes!

Dry off, dress in your loose-fitting clothing, and enjoy the rest of your day, knowing that you just helped boost your T.

### ***Minimize your exposure to heavy metals.***

Make every attempt to reduce your exposure to all heavy metals including the mercury found in silver amalgams (dental fillings), aluminum in antiperspirants, arsenic in commercially-raised chickens and copper (and a variety of other heavy metals) in non-filtered tap water. Mercury has particularly harmful effects on testosterone.

Sadly, fish—one of nature's most healthy foods—is often contaminated with mercury. Thanks to the wonders of industrial agriculture, a recent study found that 50% of all food products containing high-fructose corn syrup were contaminated by mercury, yet another reason to avoid eating all processed foods!

Eat only the following, wild-caught fish: salmon, tilapia, sole, sardines, scallops, shrimp, and trout.

### ***Reduce your free-radical load.***

While free radicals are necessary for energy production and immunity, excessive amounts of them can damage the health of your cells and cause hormonal imbalances. In addition to

excessive physical and mental stress, the free radicals that come from the things we eat and the air we breathe are the most common sources of free radical exposure. [Use an at-home assessment to determine your current free radical load.](#)

## Toxic foods that promote free radical damage include:

**Synthetic vitamins and antioxidants.** Antioxidants need to work as a team. Avoid the use of isolated and/or synthetic antioxidants (such as isolated vitamin C, vitamin E and beta carotene) as they can actually create physiological imbalances and increase free radical production. Discontinue the use of products which contains aspartame—an excitotoxin.



**Processed and heated vegetable oils.** Avoid soy, canola and corn oils, all hydrogenated oils and commercially-fried foods.

**Meats and starches cooked at high-temperatures.** Choose longer, low-heat cooking as opposed to broiling or grilling.

Supplement your diet with organic, whole food concentrates. Use oils and fats, which are resistant to damage from light, heat and oxygen, for cooking. These include avocado oil, coconut oil, red palm oil, grass-fed butter, and ghee. Cook foods using a lower temperature. Slow cooking and steaming produce the least number of carcinogenic compounds while preserving more

of the nutritional content of foods.

## Airborne toxins that increase free radical production include:

**Air pollution.** While you just can't pick up and move to a location with clean air, we can avoid intense or prolonged physical activity when air quality levels are low—even if it means skipping a workout. Air pollution is a soup of toxic chemicals with direct access to the body provided by the skin and lungs. Be aware that in many buildings and homes, indoor air quality can be significantly worse than that found outdoors, so keep windows open if the weather is nice outside and take steps to minimize your use of air conditioning if it's not absolutely necessary.

**Ionizing radiation.** Opt out of the airport scanner and, if possible, schedule your flights at night. Avoid frequent exposure to diagnostic x-rays when possible. Chronic and/or high dose exposure to radiation damages the pituitary gland leading to reduced LH and decreased testosterone production.

**Cigarette smoke.** Strictly avoid both smoking and exposure to second-hand smoke. Cigarette smoke will increase SHBG and reduce free testosterone. In addition to greatly increasing your

risk of cancer, cigarette smoking ages your entire body and makes you look (and feel) old. In addition, the toxins found in cigarette smoke lead to inflammation, low nitric oxide levels and vascular disease. ED anyone?

When you are exposed to pollutants, especially during air travel, it is recommended that you protect yourself by eating button mushrooms, cruciferous vegetables, fermented foods (such as kefir and kombucha), and taking nutritional supplements prior to and after your exposure with a powdered, whole-food concentrate, anti-estrogen supplement (if you are not already using one) and four to eight milligrams of the food-based antioxidant, astaxanthin. Astaxanthin is a powerful antioxidant with unique properties that allow it to protect your body at a cellular level.

## Emasculating Chemicals

**Xenoestrogens (meaning foreign estrogens)** are man-made compounds that mimic the effects of natural estrogens in the body. If you wondered why testosterone levels are down 25%, male estrogen levels are up 40%, and sperm are counts less than 40% of what they were 20 years ago, you need not look any farther than the xenoestrogens. These chemicals are found virtually everywhere in the modern world, lurking in personal care products, food containers, medical tubing, children's toys, and much more.



Our environment and food supply are fraught with hidden chemicals. Herbicides and pesticides are sprayed regularly on farms, forests, orchards, lawns and gardens. Industries are dumping their waste products into the water supply, which pollutes the water you drink. Tons of pharmaceutical and synthetic estrogens secreted by menopausal women pollute our streams and rivers.

And it doesn't stop there. The air you breathe is carrying estrogen in the form of smoke, soot and exhaust vapors. The commercial meat and poultry you eat every day is pumped full of hormones and additives that are high in estrogen. The foreign estrogens found in plastics and pesticides disrupt the natural hormonal cycles of both human and animal life. The widespread

use of genetically-modified foods has exacerbated the xenoestrogen problem. Glyphosate (the active ingredient in Roundup®, Monsanto's™ widely-used pesticide) often leaves a residue on the genetically-modified crops it is used on. And the artificial gene, which has been inserted into every genetically-modified seed, is absorbed and housed within the gastrointestinal tract.

During the course of your daily life, you are exposed to a variety of environmental chemicals. It is important to be aware of the most common and most toxic ones:

**Genetically Modified Organisms (GMOs)** are foods that, in most simple terms, have had an insecticide gene implanted into their DNA, supposedly to reduce their need for pesticide treatment, or to allow them to be resistant to dying from pesticides, thereby allowing the farmers to use more pesticides. The list of genetically-modified foods is growing but primarily includes corn, soy, canola and sugar beets. The most common problem associated with the consumption of GMO foods is an increased incidence of both gastrointestinal and immune disorders. The regular consumption of GMO foods has also been shown toxic to testicular cells and disruptive to testosterone synthesis. Recent laboratory studies have proven that male rats fed a genetically-modified diet lose their ability to reproduce within just three generations.

**Phthalates** are a group of industrial chemicals used to make plastics, like polyvinyl chloride or PVC, more flexible and resilient. They are found in everything from vinyl flooring, detergents, automotive plastics, soap, shampoo, deodorants, fragrances, hair spray, nail polish, plastic bags, processed food packaging, garden hoses, inflatable toys, blood-storage bags, and intravenous medical tubing. They're also one of the most pervasive of the endocrine disrupters. Studies have shown that exposure to phthalates can lead to incomplete testicular descent, reduced sperm counts, testicular atrophy, and/or structural abnormality and inflammation in newborns.

**Bisphenol-A (BPA)** is a common ingredient in many plastics including those in reusable water bottles and resins lining most food cans and dental sealants. BPA is primarily used to prevent preserved or canned foods from developing a metallic or plastic taste. In addition to being used as an inner lining in most canned foods, it can be found in many plastic baby bottles and food storage containers. Almost all canned foods contain BPA. This toxin is now so pervasive it can be detected in the umbilical cord blood of 90% of all newborn infants. Once in the body, BPA mimics estrogen setting the stage for a wide variety of health-related problems that include—but are not limited to—early puberty, infertility, cancer, diabetes, and heart disease.

For more reasons to avoid BPA, and tips, read this article:

<http://www.truthaboutabs.com/bpa-and-abdominal-fat.html>

**Parabens** are a class of chemicals commonly used as preservatives by cosmetic and pharmaceutical industries. Like BPA, parabens have estrogen-like properties that lead to similar health and hormonal problems.

**Metalloestrogens** are a broad range of metals that also add to the estrogenic burden of the human body. These metals are added to thousands of consumer products including vaccines. Research indicates that they are capable of binding to cellular estrogen receptors, mimicking the effects of natural, physiological estrogens.

**Perfluorooctanoic acid (PFOA)** is a chemical that makes things resistant to grease and water. It is used to keep grease from leaking through fast food wrappers and microwave popcorn bags, in non-stick coatings like Teflon, and in water-resistant fabrics like Gore-Tex®. PFOA is a highly-estrogenic compound that can disrupt your hormones. It has also been linked to thyroid disease, cancer, immune system problems, and increased LDL cholesterol levels. To make matters worse, PFOAs remain present in the body for many years.

If you use non-stick pots and pans on a daily basis, you may unknowingly be exposing yourself and your family to PFOAs. In less than five minutes at high temperatures, the coating of non-stick cookware will also break down into a chemical warfare agent known as PFIB, and a chemical analog of the WWII nerve gas phosgene.

**Nonylphenol ethoxylates (NPEs)** are known to be potent endocrine disrupters. These chemicals affect gene expression by turning on or off certain genes. They interfere with the way your glandular system works and mimic the actions of estrogen. NPEs have been implicated as a key reason why some male marine species have become female.

**Fluoride** is an industrial waste product, yet it is routinely and purposely added to our water supply to supposedly make our teeth stronger and less prone to cavities. While topical fluoride will protect teeth at risk, drinking fluoride is akin to swallowing sunscreen to protect our body from getting a burn. Fluoride exposure can lead to many health-related problems including bone and joint pain, immune disorders, lower fertility rates, hormonal imbalances, and low sperm counts.

Make sure you're using a water filter that removes fluoride. [This is one of the best filters we've found that removes fluoride.](#)

**Bovine growth hormones (rBGH or rBST)** are genetically engineered and routinely given to industrially-raised cattle, pigs, poultry, and other livestock to increase their growth and fat content. The concentration of bovine growth hormones is greatest in non-organic, pasteurized dairy products. A causal link between their consumption and the onset of both premature adolescence and prostate cancer has been scientifically established.

**MSG** is an excitotoxin and food additive commonly used to enhance flavor. MSG itself is not frequently found on food labels because it is often disguised as a "natural flavor" or a "spice;" as hydrolyzed yeast extract, or a number of other deceptive ingredient names. The consumption of MSG has been linked to reduced fertility rates, brain disorders, and low testosterone levels.

## Take Action: Avoiding Xenoestrogens

Avoiding xenoestrogens is one of the most important steps you can take to restore and regain your manhood. Some of the most common sources and corresponding alternatives are listed below. For more information on alternative product choices, please refer to the **Resources** section.

### Cosmetics and Toiletries

Virtually all conventional personal care items (including cologne, deodorant, antiperspirant, shampoo, conditioner, shaving gel, toothpaste, lotion, sunscreen, and cosmetics) contain xenoestrogens in some form. They are primarily used as a preservative in the form of parabens, phenoxyethanol, phthalates, and other compounds. Eliminating these toxic products is a very important action step since chemicals absorbed through the skin go directly to the tissues and can be up to ten times more potent than those that are ingested orally.

\*Toss out your synthetic, chemical-laden personal products and switch to non-synthetic natural brands.

\*Avoid toxic commercial sunscreens. They contain phthalates, homosalate, benzophenone-3, homosalate, 4-methyl-benzylidene camphor (4-MBC) and octyl-dimethyl-PABA. If you absolutely need to use sunscreen, use a natural sunscreen that has a base of zinc or titanium instead of the chemicals above.

Here's a full article on the dangers to your health of chemical sunscreens, and tips:

<http://www.truthaboutabs.com/dangers-of-sunscreens.html>

### Plastics

Most plastics, especially soft plastics, contain many xenoestrogenic compounds. The two most common are phthalates and Bisphenol-A (BPA). Both are unstable and can leach out or volatilize over time, especially when exposed to acid or heat. Most plastic bottles are blown from plastic tubes at very high temperatures and then immediately filled with water before the plastic molecules stabilize.





- Do not drink plastic, bottled water. Drink filtered water from a glass jar or BPA-free container.
- Store food and beverages in glass containers. Avoid #3, #6 and #7 plastics.  
\*Never heat any food in plastic in the microwave. And minimize your use of the microwave, too!
- Avoid canned foods and plastic wrap (which contains DEHA). Do not purchase plastic-wrapped foods, especially those that have been freshly prepared
- Stop using Teflon ® and other non-stick cookware. Use stainless steel, ceramic, or cast iron.
- Do not drink or eat from styrofoam cups or containers.

## Meat and Dairy Products, and Eggs

The consumption of conventionally-raised dairy products is strongly associated with the incidence of high estrogen levels and excessive body fat due to the large amount of growth hormones (rBGH or rBST) fed to cattle, pigs, poultry, and other livestock. In addition, the exceptionally toxic, estrogenic chemical known as dioxin (the component in Agent Orange) is used to treat feed for conventionally-raised animals today; it is commonly found in industrially-raised animal fats and dairy products.



\*Eat organic, grass-fed meats and dairy; organic pasture raised eggs and poultry.

\*In a pinch, choose leaner cuts of meat if you can't find grass-fed meat.

## Household Products

New clothing, laundry detergents, household cleaners, and fabric softeners are particularly dangerous; the chemical residues on them or in them are absorbed in very large amounts because they are in constant and direct contact with the skin.

\*Use natural cleaning products or old-fashioned cleaners like baking soda, Borax®, and vinegar.

\*Use only natural laundry detergents, fabric softeners, and dryer sheets.

\*Buy organic clothing or used items from thrift and second-hand stores.

\*Wash new clothing at least twice (new bedding three times) before wearing it.

\*Avoid air fresheners, synthetic fragrances, and insecticides. Air your house out frequently.

\*Replace vinyl shower curtains with those made of fabric.

\*Opt for toxin-free alternatives when choosing paint, floor, and wall coverings for your home.

## **Chemical Pesticides and Fertilizers**

Many of the herbicides and pesticides used in conventional farming are estrogenic. One of the most famous was DDT, which was banned in the United States during the early 1970's.

Unfortunately, many others remain in legal for use in the U.S. and abroad. It is estimated that the average American consumes over one pound of pesticides (primarily atrazine, endosulfan, and methoxychlor) per year.

- Eat organic and non-GMO foods whenever possible.
- Soak and wash your fruit and vegetables in mild soap or veggie wash prior to eating.
- Install a high-quality water filter on all your faucets (even those in your shower or bath).
- Use natural pest control in your home and garden
- Avoid synthetic flea shampoos, flea collars, and flea pesticides.

## Step Two: Get Lean



You will never be able to optimize your T/E ratio unless you get lean! But remember: getting lean means more than losing weight; it means increasing your muscle mass and decreasing your visceral (and abdominal) body fat. While doing just one of these two things can speed the restoration of your T/E ratio, doing both can lead to dramatic results.

And here's some even better news—getting lean doesn't require endless hours of physical activity and tight calorie restriction. In fact, excessive physical activity and too few calories can actually make you fat! In both cases, a starvation defense mechanism is triggered. Because your brain believes your body is starving, it issues a directive for more cortisol and

estradiol; both work against the health of your hormonal system by inhibiting the production of testosterone.

Trust the dietary information you'll be given in this program. Hide the scale and don't count calories. Instead, focus on nourishing your body and restoring your cellular health. This is what will ultimately lead to an optimal T/E ratio. Along the way, you'll naturally become leaner as you begin to fuel your body correctly.

Let's take a look at why getting lean is so essential for good hormonal health.

### ***Excess belly fat affects more than your appearance, it influences your health.***

A man's waist circumference at the naval is the single strongest predictor of a low testosterone level. In fact, it's an even more accurate than markers of age and overall health. Fat cells (especially in the abdominal region) produce an enzyme called aromatase, which converts testosterone into estrogen. If your waist circumference is too large, it follows that you will have too much aromatase and too much estrogen.

Here's the basic formula outlining what happens: Excess abdominal fat=> increased aromatase=> increased estrogen and reduced testosterone=> decreased muscle mass and reduced metabolism=>increased fat.

### ***Increase your lean muscle mass.***

Losing muscle mass as we get older contributes to an age-related metabolic slowdown which will lead to increased body fat content. So even if you work to maintain a steady weight throughout the years, you almost certainly will have less muscle mass, increased body fat, and lower testosterone levels. It is necessary to include a proactive plan for building and maintaining lean muscle mass into your appearance and health management programs. Those

seeking to optimize their T/E ratio should take steps to build muscle because it is so hormonally beneficial.

Here's the basic formula describing what will happen: More muscle=> a higher metabolism=>lower body fat => lower estrogen => more testosterone=> increased ability to get and stay lean—and build even more muscle.

***Why is it difficult for so many men to get lean?*** The double-edged problem men face these days is that their excessive levels of estrogen and insulin trigger the creation of the visceral (inflammatory) fat which lines (and protects) the organs. As you have learned, visceral fat is active; it creates more estrogen, lowers testosterone, and begins a vicious cycle of fat production and muscle loss. To make matters worse, excessive estrogen and insulin are toxic to the body; they promote internal inflammation which accelerates aging and age-related illness—atherosclerosis, hypertension, diabetes, and low testosterone.

***The solution is to become a fat burner.*** One of the most powerful things you can do to maximize your long-term hormonal health is to become a **metabolic fat burner**. When fat-adapted, your body's metabolic engine begins to work more like a fire burning logs instead of twigs or paper.

Fueled by fat, your energy system will run longer, stronger and cleaner. And every system in your body will benefit from having a more consistent, reliable source of energy that is generated with a minimal amount of metabolic waste (similar to the ash created by burning paper). Less metabolic waste means lower levels of internal inflammation (the underlying cause of almost every modern, chronic disease), less recovery time, and an improved capacity for both physical and mental fitness.

## How you can you tell if you're a fat-burner?

Ask yourself:

1. Can I go four to five hours without eating, or does skipping a meal cause me to suffer from ravenous hunger, anxiety, headaches, brain fog or other common symptoms of low blood sugar?
2. Do I enjoy steady, even energy throughout the day, or do I experience peaks and valleys that leave me longing for a nap?
3. Can I exercise in a fasted state (in the morning prior to eating), or exercise for an hour or more without relying on the use of carbohydrate-based foods or drinks?
4. Am I relatively unconcerned about my body fat content, or do I need to maintain high and constant levels of exercise in order to stay lean?
5. Are my blood sugar, blood pressure and/or cholesterol levels within an optimal range, without the use of any medication?

If you answered “yes” to all of these questions, congratulations! Your body is being fueled by fat. If you answered “no” to most them, don’t despair. Your inner engine can become optimally fuel efficient by avoiding toxins and following the testosterone-enhancing diet plan coming up next.

## Take Action: Lower your Estrogen Level

The three, biggest factors contributing to exaggerated male estrogen levels are environmental xenoestrogens (from plastics, pesticides, herbicides, and other synthetics), phytoestrogens in the diet (from foods like flax, bran, soy, and legumes) and from the insulin-driven, abdominal body fat (that is the inevitable result of consuming processed foods, sugars, grains, and alcohol).

You can actually increase your testosterone level (up to 50%) by simply eliminating your exposure to estrogenic compounds and flushing all the excess estrogens from your body. If your estradiol levels are more than 1.5 pg/ml, reducing your body fat content should be the number one priority on your “to do” list. Below you’ll find the other, important action steps.

### Avoid or strictly limit:

\**Xenoestrogens.*

\**Alcohol and medications.*

\**Sugars* (natural and artificial) and processed carbohydrates (like bread, cereals, and pasta).

\**Unfermented soy products.* They will increase your estrogen, decrease your testosterone, and lower your sperm count.

\**Grapefruit.* This one may surprise you, but it interferes with the liver’s ability to metabolize estrogen, thereby increasing its potency.

### Add regularly to your diet:

\* *Button (white) mushrooms,* raw or cooked. Button mushrooms inhibit estrogen production.

\* *Pomegranate* juice or powder. Pomegranate blocks the harmful effects of estrogen.

\**Turmeric* root tea (brewing the fresh root is best); turmeric powder in cooking. The phenolic compounds in turmeric stop estrogenic chemicals from getting inside the cells.

\**Cruciferous vegetables* (like broccoli, cauliflower, kale, radishes, turnips, cabbage, and Brussels sprouts). They enhance the liver’s ability to metabolize and excrete excess estrogen.

\**Fermented foods* such as raw, organic, grass-fed yogurt and kefir, kombucha, and organic, fermented vegetables like sauerkraut or Kimchi. These foods contain beneficial, pro-biotic bacteria that have the ability to break down xenoestrogens and reduce their intestinal absorption.

\**Whole-food concentrates* that contain the hundreds of phytonutrients your body needs for strong liver, gastrointestinal, and cellular function.

**Mike's note:** One of my newest favorite [whole food concentrates drinks can be found here](#) and [here](#)

## Step Three: Adopt a Testosterone-Enhancing Diet

### Nourish your body with whole foods and food-based supplements.

Our bodies have evolved over thousands of years to be nourished in a particular way. Over the past hundred years, however, we have stopped eating many of the ancestrally-appropriate foods we once ate. While our modern diet is dominated by grains and sugars, our primal relatives knew their health and survival were dependent upon eating as much of the fattest animals they could hunt—and shoots, roots, and berries they could gather.

If you've been following the traditional, outdated dietary advice (cut your calories, reduce your intake of dietary fat, and limit your intake of red meat and eggs), you are depriving your body of all the critical nutrients it needs to build testosterone and stay strong! While you may or may not want to adhere to a 100% “primal” diet, there are a few, fundamental food habits you should adopt:

*\*Get real!* Eat fresh, whole foods not processed, packaged imitations.

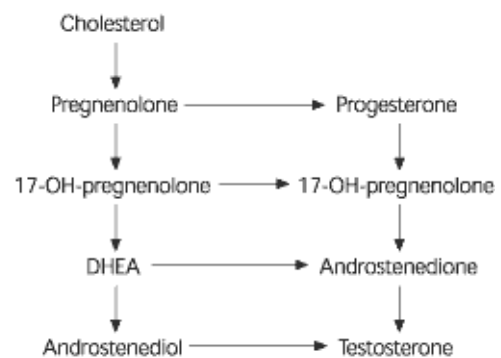
*\*Avoid sugar,* both natural and artificial, like the plague!

*\*Eat plenty of healthy fat,* which is critical for consistent energy, good cellular health, and optimal testosterone production.

As the old saying goes, “You are what you eat.” And if you want to achieve and maintain a high testosterone level, it is extremely important to stick to these few, simple dietary rules. (Those who want more comprehensive, dietary advice can refer to the **Food for Thought PDF** and the additional information found in the **Resources** section.)

**Eat more fat!** Make sure at least 30-50 percent of your diet comes from healthy fats. Most men don't realize that testosterone—and other important male hormones—are actually produced from cholesterol. When fats and cholesterol are deficient, testosterone levels will decline.

When you eat more monounsaturated fats (found in olive oil), saturated fats (from grass-fed meats) and medium chain (MCT) fats (found in coconuts), you are providing your body with the building blocks of testosterone. A low-fat, high-fiber diet will have the opposite and adverse effect!



You need cholesterol to make testosterone

**An important note:** It's not really the amount of fat, but the type of fat (and how it's processed) that can adversely affect your health. Grass-fed meats and butter, organic whole eggs, avocados, wild fish, seeds, nuts, olive and coconut oils should be the primary sources of your

fat calories. Make sure to eat omega 3 essential fats (found in wild, cold-water fish; macadamia nuts, pumpkin, hemp and chia seeds) on a regular basis. Strictly avoid the inflammatory omega-6 fats found in soy, corn, safflower, canola, and sesame oils; and the trans-fats found in margarines, deep fried foods, and other processed foods.

**Eat more vegetables.** Especially those that are green and leafy such as kale, Swiss chard, and spinach; and cruciferous vegetables such as broccoli, cauliflower, Brussels sprouts, and cabbage. These vegetables contain phytonutrients which are essential for not only healthy hormone production, but nitric oxide and estrogen metabolism.



**Avoid simple sugars and control your carbohydrate intake.** Regular high carbohydrate intake from simple sugars and starches (breads, cereals, pasta and potatoes) can create chronic elevations in blood sugar, which stimulate an over production of insulin and cortisol—the two hormones that work against testosterone. Minimize your alcohol intake and eliminate wheat and sugar (including that found in sodas, juices, energy drinks and flavored waters). Get most of your carbohydrates from root vegetables like sweet potatoes and squashes; and more complex starches such as white and wild rice.

**Limit your fructose intake to less than 15 grams daily.** Even though this simple sugar doesn't cause a direct increase in blood sugar, it can cause liver dysfunction, insulin resistance, and hormonal insufficiencies. Fructose is commercially found in the corn syrup and/or corn sugar used to sweeten sodas, juices, and many packaged foods. Fructose is also naturally found in agave, honey, maple syrup, and fruit.

**Avoid large, carbohydrate-heavy meals.** Large blood sugar spikes, especially from eating large amounts of carbohydrates at one sitting, will actually decrease testosterone by as much as 25% for two hours or more. Think twice about filling or “loading” up with pastas, breads, potatoes, and sweet treats before a physical, mental or sexual event!

**Make sure you eat enough protein.** In Latin, the word protein literally means “above all else.” Without an adequate supply of protein, your muscles will not have the essential amino acids they need for growth, repair, and maximal function. Protein intake should range from one to one and a half grams per pound of body weight per day. Supplement your diet with a high-quality protein powder and/or an essential amino acid formula to insure that your body's hormonal protein needs are being met.



**Consume at least ¾ ounce of water per pound of body weight per day.** Clean, filtered water is crucial for optimum health. Eliminate sodas, flavored waters, carbonated beverages, and canned or bottled juices. These liquids are all acidic in nature and have negative effects on the body's metabolism.

**Eat one or two (organic, free-range) whole hardboiled eggs daily.** Not only are small amounts of dietary cholesterol important for the formation of testosterone, eggs provide the essential fatty acids necessary for optimal hormonal regulation. Eggs also are rich in essential amino acids, making them the best source of protein. Don't believe the hype—the cholesterol in eggs isn't the least bit harmful or unhealthy!

**Have a “power drink” each day.** For a nourishing and easily-digestible meal replacement, combine a high quality protein powder with a [whole food concentrate](#), some healthy fats (like MCT oil or a handful of macadamia nuts), a small amount of carbohydrates (half a small banana or a handful of blueberries) and some coconut or almond milk. Add ice and water to taste. Blend for even consistency. (See the **Resources** section for a more complete recipe).

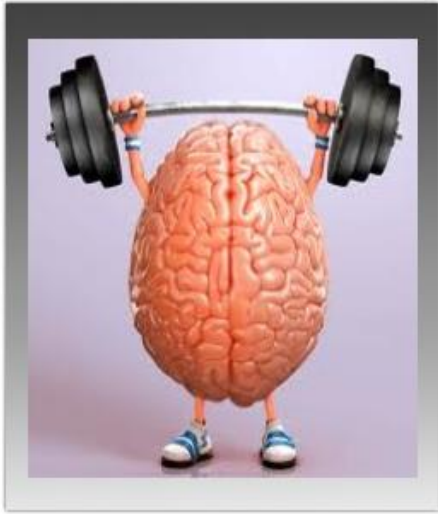


**Don't skimp on calories.** Consuming enough calories prevents the body from slowing testosterone production as a reaction to perceived starvation. According to a recent research study, men on an intense exercise regimen who took in only 1,800 calories a day experienced a 40 to 50 percent drop in testosterone after just 5 days.

**Consider some intermittent fasting.** Going for an extended period of time without food is a part of our primal, food heritage. It is how we evolved and can be employed as a powerful technique for achieving freedom from constant hunger and eating. Intermittent fasting can also be used as a strategy for reducing your level of internal inflammation, protecting your cells, and supercharging your immune system. A typical intermittent fasting routine is to not eat for 14-15 hours each day which overlaps your sleep time. So if you ate dinner at 6pm, then you wouldn't eat your first meal until 9 or 10am the next morning, giving you a 15-16 hr fasting period. There's a lot of good science behind using intermittent fasting, but...

Use caution: Do not attempt an intermittent fast if you are under stress, have adrenal fatigue, your testosterone level is low and/or you have not been fat adapted for at least 3 months. In the meantime, eating regular meals full of healthy fats will help you maintain steady blood sugar levels and suppress unnecessary cortisol release. (See **Step 14: Keep Learning** for more details).

## Step Four: Train your Brain



Dopamine is a neurotransmitter associated with feelings of pleasure and motivation. It drives us to take part in activities we enjoy. It assists in the maintenance of a normal libido, and reinforces the feelings of euphoria we experience when we are in love. If your dopamine levels are low, you may feel unmotivated, unfocused, lethargic, and devoid of direction in life.

If you think that the effects of low dopamine and low testosterone are similar, you're absolutely right! Ancestrally, high levels of dopamine gave us the drive and passion to hunt, procreate, and survive; testosterone worked as a complement, giving us the physical edge we needed to accomplish these tasks.

Because dopamine and testosterone work together in conjunction, increasing one will increase the other. And while increasing your testosterone level can take time, effort, and patience, raising your dopamine level is relatively easy—and can happen in a matter of minutes. In fact, boosting your dopamine level can increase your testosterone level by a full 25% or more! It's no secret that gambling, extreme sports and other risky activities that increase dopamine also increase testosterone and sex drive. But since these activities are not a realistic option for most men, finding a practical strategy for giving your dopamine level a regular lift can dramatically improve the overall quality of your life.

These are just a few, simple suggestions to get you started:

- \*Eat an adequate amount of protein
- \*Prioritize your sleep and recovery
- \*Meditate or try some yoga
- \*Have sex and create sexual anticipation
- \*Do something—anything—new
- \*Take part in a competitive event
- \*Discover your passion
- \*Take a safe risk
- \*Bond with the boys
- \*Optimize your testosterone

Now let's take an in-depth look at three of the most powerful dopamine boosters...

**Competition.** Winning and a winning attitude will both stimulate dopamine and testosterone; losing and a losing attitude will do just the opposite. Experiencing a repetitive loss—in any area of your life—is simply not good for you or your hormonal health. Here are some interesting facts about testosterone and competition:

- \*Your testosterone level will increase shortly before any competition.
- \*The testosterone levels of winners are higher than those of losers.
- \*The win must be significant and bring true satisfaction to the winner.

**Improve your outlook on life.** Your attitudes and beliefs about life, about yourself, and about sex have a profound impact on your testosterone level and libido. Just as with competition, the self-decided loser who chooses to focus on the negative and is continually “down” on himself will be fighting an uphill battle when it comes to optimizing his testosterone and his overall enjoyment of life. If you feel your marriage, your mortgage, or your job is destroying your life, it is almost certainly destroying your testosterone level.



If you truly want to increase your testosterone, you must adopt a positive outlook on life. Low dopamine, low testosterone, and mood are closely inter-related. And it's a vicious cycle since one can continually affect the others. Depression, for example, leads to lower levels of testosterone and is strongly associated with erectile dysfunction which contributes to even less testosterone and more severe depression. The good news is that making a conscious choice to change your attitude can turn things around. Remember—if you can think it, you can be it!

**Get sexually aroused.** On second thought, this action is so critical for a healthy dopamine and testosterone level that it merits its very own step.

So let's proceed to **Step Five**.

## Step Five: Get Sexually Aroused—Often!

As mentioned previously, this step can complement your efforts in tackling **Step Four: Train your Brain**. The fundamentals follow below:

**Have regular sex.** Want to boost your testosterone level? Then here's your homework assignment: Have sex at least twice a week! For most men, that shouldn't be too hard. Mornings are best because your testosterone level will naturally be at its highest when you wake up. Having sex will increase your dopamine and testosterone, which will make you want even more sex—it's a positive, pleasure cycle!



**Anticipate sex.** While sex itself can increase testosterone, the anticipation of sex can do the very same thing. This is one reason why married men have significantly lower testosterone levels than their unmarried counterparts. For a variety of reasons, the majority of married men have given up or forgotten about the importance of romance, excitement, and the sexual pursuit of their wives. That kind of attitude is the “kiss of death” for both your dopamine and testosterone levels. There are physiological reasons why you need romance and sexual excitement in your life!

**Visualize sex.** Wonder why men are so drawn to sexually-charged images? They increase their dopamine and testosterone levels, which make them feel good. Here's a simple trick for increasing your dopamine and testosterone. While it's not very difficult, it may take some practice. Create and hold a sexual image in your mind when you lie down to sleep. If you feel your focus wandering, gently shift your thoughts back to the main subject matter. In time, your nightly dreams will become more sexual and your morning erections will become stronger.

**Have frequent erections.** Simply having an erection will cause your circulating testosterone to rise significantly. So the more erections you have, the more testosterone your body will produce.

**Limit your orgasms.** If you want to maintain high dopamine and testosterone levels, it is important to maintain control of your ejaculation frequency. While anticipation, visualization, and the act of having sex will amp up your hormones, orgasm (especially when practiced alone) will do just the opposite.

If you want to be ready when it really counts, exercise some self-control. This practice will be even more important for those who are already dopamine or testosterone depleted. If this is

you, it would be wise to limit self-stimulation to orgasm to once a week. As your hormonal levels improve, you will begin to build a greater virility reservoir.

## **Learn More: Dopamine, the Pleasure Chemical**

Dopamine is a neurotransmitter found in the brain and nervous system that provides for feelings of pleasure, motivation, coordination, and focus. It's at the heart of our sexual drive and survival instincts, and it motivates us to do just about everything—from eating to sex. This mechanism within the reward center of the primitive brain has been around for millions of years and has not changed. Humans and all other mammals are very similar in this respect.

Dopamine is also tied to muscle reflexes and sensory perception. This is why when you are tired, your reaction time, visual perception and hand-eye coordination worsen. If you feel depressed, unfocused, are prone to addictive behavior, have a minimal sex drive, or experience regular muscle spasms, you probably have low dopamine.

When behaviors or substances trigger dopamine, they stimulate the pleasure/reward center in the brain. And since the brain likes pleasure, they can become addictive. This is why gambling, shopping, smoking cigarettes, exercise, computer games, sex, overeating and other seemingly-unrelated activities will increase dopamine and can become addictive. This is also why people often develop a new addiction after giving up another.

Because of this dopamine boost, you are programmed to seek out higher versus lower calorie foods. And dopamine is what drives many men to have sex over most other activities. With dopamine as the driving force, your biology has programmed you to procreate. Morality and ethics aside, it's what encourages you to move on to new partners, creating greater genetic variety among your offspring.

Your primitive brain accomplishes these goals of more progeny and promiscuity by manipulating your brain chemistry, and thus your desires and thoughts. High levels of dopamine increase sexual desire, but also encourage you to behave recklessly. The thrill of an affair or the rush from viewing pornography are examples of high dopamine at work. Unfortunately, consistently high levels of dopamine lead to erratic behavior and compulsions that are not necessarily conducive to survival.

Because of this, most mammals evolved with defined estrus periods; they go into "heat." The rest of the time, they are more neutral about their need for sex. Humans, however, don't have a period of "heat" followed by a long period of indifference. Unlike all other mammals, we have the potential for on-going, dopamine-driven sexual desire and other addictive behaviors. Fortunately, we do have an "off switch" that's flipped after too much passion.

Two events happen simultaneously: Dopamine (our driver) plummets and prolactin (our regulator) soars. This mechanism shifts your attention elsewhere—to hunting and gathering, taking care of babies, building shelters, and so forth. Without this natural, protective shutdown, men would pursue sex to the exclusion of all other activities. The drop in dopamine and rise in prolactin is the cause of the emotional separation that so often follows in the days or weeks after a passionate encounter.

## Step Six: Incorporate Vigorous Activity into your Daily Life.

The duration, intensity and frequency of exercise dictate how much testosterone your body will produce. Testosterone levels increase most with short, intense bursts of activity (like those used for interval sprints or high-intensity strength training). They decrease with prolonged activities like distance running, swimming, or cycling. To make matters worse, endurance training schedules often do not allow for adequate rest and recovery. As a result, testosterone loss and tissue damage often occur.

If you over the age of 35 and participate in regular endurance-related training and competition, it is important to know that you are almost certainly depleting your testosterone levels, inhibiting your performance and recovery, and increasing your risk of injury and illness. If you are determined to continue this type of training, maximizing your hormonal health is an absolute essential! In addition, you may want to consider the use of an [herbal hormonal support formula](#) during periods of heavy training and racing.



In order to ramp up your body's innate ability to produce testosterone, you will need to add some intermittent, higher-level intensity to your workouts. Your body requires periods of vigorous activity and/or high-intensity movement in order to trigger a testosterone burst. If you want to hit your hormonal stride, you will need to do some high-intensity exercise for 20 to 30 minutes (including your warm up) three times a week.

Consider getting a functional movement assessment prior to starting a high-intensity interval training program. You may have some muscular imbalances or weaknesses that could surface as you begin to increase your level of exertion. Take precautions in order to avoid a testosterone-depleting injury. Refer to the **Resources** section for links to more information and professional guidance.

**Follow these fundamental training guidelines for maximum hormonal health:**

**Use high-intensity intervals.** Step off the treadmill! Continual aerobic exercise lowers testosterone. Instead, swim some intervals, cycle hill repeats, perform a series of timed, hard efforts on the rower or StairMaster®. These exercises use a wider range of motion against more resistance, which results in greater muscular stimulation, a higher heart rate, and more testosterone.

Here's how to do it: After a brief warm-up, perform eight 20 to 40 second intervals with 90 to 120 seconds of rest in between. This workout should take you no more than 20 minutes to complete.

And here's how to take it to the next level: For maximal hormonal benefit, complete your interval training session in the morning and in a fasted state. Wait one hour before eating. Implement this advanced strategy only after you have become **fat adapted**. See the **Resources** section for additional information.

**Sprint.** Sprinting will increase your total testosterone level. And this level will remain elevated even while your recover. Testosterone increases are directly correlated with lactate levels in the blood (lactic acid is predominantly produced when you go through anaerobic exercise, not aerobic exercise). Even short, six-second sprint efforts can significantly increase your testosterone.

Give it a try: Sprint uphill for 15 seconds, walk back down and repeat eight times.

**Move slowly.** To counter balance the physiological stress of running fast, the male body has evolved to move slowly. So a long walk, easy hike, or relaxing spin on the bike offer opportunities for physical and mental recharge, without over taxing the body. When you are at work, make sure you get up from your desk at regular intervals during the day to move around. Recent research shows that even that no amount or type of physical activity will overcome the negative physiologic effects of a sedentary work day.

**Lift heavy things.** Resistance training stimulates testosterone production, so be sure to lift heavy things every now and again. Three sets of five repetitions at 70 to 85 percent of one maximum repetition results in the largest testosterone boost. Use weights that will take you to complete failure for the last set.



Here are additional guidelines to follow:

**Choose multi-joint exercises.** Use multi-joint exercises to work large muscle groups such as squats, dead-lifts, dumbbell bench presses, and rows. These exercises can increase testosterone more than single-joint, small-muscle-group movements. Use compound exercises that involve rotary motion around more than one joint, and involve multiple muscle groups simultaneously.

**Go to failure.** There is a positive correlation between intensity of effort and testosterone production. The more muscle fibers you can recruit, the more testosterone production there will be. Maximum muscle fiber recruitment comes from training to muscular failure and involving the



Type 2b (fast-twitch) fibers.

**Vary your rest intervals.** Varying the length of your rest intervals between weight sets can stimulate different hormonal responses. Resting 90 seconds between squat and bench press sets, for example, will result in the greatest testosterone boost. Resting 60 seconds will do less for your testosterone, but a great deal for your growth hormones.

**Limit your strength training to no more than 35 minutes, 2 to 3 days a week.** Physical exercise will elevate testosterone for about forty-five minutes. After an hour, the effects are negative and begin to force a decline. Avoid combining aerobic (except for a brief warm-up) or HIIT (high intensity interval training) exercise during strength training sessions. If you need to exercise or train more, split sessions are recommended. Please note: This maximal, training duration is recommended only for those with normal testosterone levels. If your testosterone level is low, limit your training to 30 minutes, including a warm up.

**Use periodization of your workouts.** Change your workouts frequently by rotating routines and varying your exercise regimens throughout the year. Cross-fit or P90X are examples of variable, high-intensity training programs. But these particular programs feature interval sessions which are too lengthy for optimum hormonal benefit. Using them only occasionally, for a change of pace.

**Rest harder than you work.** While you need a threshold level of stress to elicit a positive, hormonal response from your training, you will negate your benefits and stunt your testosterone gains by as much as 40% if you do not recover completely after a hard effort. While it may be difficult to accept, more is not always better. And the more intensely you train, the more recovery time you will need.

Avoid stressing the same muscle groups for at least 48 hours. And remain vigilant for signs of overtraining which may include an elevated resting heart rate, poor performance, slow recovery, and muscle soreness; loss of appetite, lethargy, muscle loss, irritability, and difficulty sleeping.

## Take Action: Get Down and Dirty with Fitness

Here's one example of a testosterone-enhancing, weekly fitness plan:

### Session #1

**Lactic-acid producing Tabata sets:** These sets are about creating a lactic acid burn and going to muscular failure which will stimulate testosterone and growth hormone production.

**Warm-up:** Move for 10 minutes to get warm. Try a rebounder and/or dynamic stretching.

**Squat session:** 20 seconds of squats, rest 10 seconds. Repeat 8 times. Set the weight to an amount that will create a burn on your last two sets.

**Rest:** 5 to 10 minutes

**Push up session:** 20 seconds of push-ups, rest 10 seconds. Repeat 8 times.

**Tip:** Place your feet slightly wider than your shoulders and angled out. Squat sitting back far enough to barely touch a low bench and then come up by contracting your gluts and with mild outward pressure with your knees. Start with body weight and progress to using dumbbells and then a barbell. As you will be doing over 100 squats in 4 minutes, the focus is not the weight, but on achieving a burn during the final, two sets.

You will need to find a bench or stairs to do the pushups as it will be almost impossible to perform over regular 120 standard pushups in 4 minutes. This pushup set won't be as physically exhausting, but your muscles may burn more.

### Session #2

**High intensity intervals:** These sets are just as much about recovery as they are effort. Your task is to go as hard as you can for 15 to 40 seconds and then train yourself to rapidly recover during a 90 to 120 seconds rest. Track your heart rate. Get it up as high as you can and then train yourself to slow it down as much as possible.

**Warm up:** Take ten minutes as in Session #1 to get warm and break into a light sweat. And while your goal for these intervals is 100% effort, use the first few intervals to ramp it up before you really get going. .

**Activity:** Any will do. These are the best. Sprinting barefoot on grass, running up hill, roller blading, elliptical, cycling hill repeats, swimming and/or rowing on an Concept 2 ergometer.

**Rest:** 90 to 120 seconds.

**Tip:** The time required to elevate your heart rate will vary based on the activity you choose. If you sprint, 15 seconds repeats are probably all you need. Rowing will require 30 seconds and swimming 40 seconds. For at-home use, a rowing ergometer occupies minimal space, works the core, back, shoulders, and legs and provides a power read out for measuring improvements over time.

### **Session #3**

Initially, simply cycle session #1 and session #2 every few days. But as you progress, it is a good idea to add in one 30-minute session (including warm-up time) of heavy weight lifting weekly using the guidelines provided (above).

## Step Seven: Rest and Recover

While the right kind of stress can be hormonally beneficial, the wrong kind can be devastating. If you lead a stress-filled life, you can expect a higher level of cortisol, less dopamine, and subsequently, lower testosterone. This is why avoiding and buffering stress is so crucial for maintaining testosterone and preventing both mental and physical burnout.

**Get eight hours of sleep.** Don't underestimate the power of a good night's sleep. Nothing can take the place of adequate rest when it comes to increasing dopamine and testosterone, and keeping your cortisol level in check.

Inadequate sleep can lower your testosterone level by as much as 20%.

Sleeping less than eight hours a night can interfere with your circadian rhythm. Testosterone is mainly produced during the REM (dream) stages of sleep, and production exponentially increases the more you sleep.



One indicator you can use to assess whether or not you are getting enough sleep is your dream state. It's a positive sign if you wake with the feeling you were dreaming the entire night. Dreams begin during the latter portion of your sleep cycle, only after you've successfully completed the first few phases of REM.

Some tips for a deeper sleep:

- \*Try to get to sleep at approximately the same time every night.
- \*Try to go to bed earlier in winter and wake up with the light if possible.
- \*Avoid late-night exercise.
- \*Turn off all electronics (especially your cell phone and computer) an hour before going to bed.
- \*Make your bedroom as light and sound proof as possible. **Try to eliminate all sources of light in your bedroom. The darker, the better.**

**Get at least 20 minutes of exposure to sunlight daily, without sunscreen.** Testosterone rises and falls with the seasons, and sunlight is essential for the natural rhythm of the body. Sunlight is necessary for optimum brain function, and, as a result, for maximum testosterone production.

Sunlight also triggers production in the skin of vitamin D3, a key nutrient in the body. It is important to assess your vitamin D3 and supplement to achieve a serum level of 45 to 60ng/dl. Because full-body sun exposure is difficult (if not impossible) during the winter, the use of a high-quality vitamin D3 supplement will be a necessity for at least a portion of the year.

**Mike's Note:** In the winter, [this is the vitamin D3 supplement that I personally take.](#)

**Organize your life.** Define and establish your goals and determine your priorities. Then create and follow a step-by-step plan to achieve them. Focus on what's really important in your life and don't let the "small stuff" get in the way.

**Take some time out for yourself every day.** Listen to calming music, watch a comedy show, read a book, go for a walk, play. If you're spiritual, dedicate a portion of each day to practicing your faith. Even five to ten minutes of silence a day can make you significantly more stress-resistant.

**Walk 20 to 30 minutes barefoot on the ground, grass or sand.** Having direct contact with the Earth and/or just spending time in nature can have a powerful effect on boosting your stress resilience.

**Play.** Shoot some hoops, throw a Frisbee®, get out for a round of golf, or challenge your friends to a game of tag football. These are all great ways to have some fun, let off some steam and give your testosterone level a competitive boost.

## Step Eight: Support Your Health with Foundational Nutrients

While there are an unlimited of different supplement choices you could make, the physiological assessment results of hundreds of men prove that a food-based multivitamin formula, vitamin D3, and omega fatty acid formula combined with a topical magnesium and powdered essential amino acid product are the key nutrients you need to look, feel, and perform your very best.



### **A phytonutrient-rich food supplement.**

Toss your synthetic, isolated multivitamin supplement and get real, whole-food support. The use of a food-derived multivitamin concentrate is an optional—but very wise—addition to your hormone restoration program. Look for a nutrient-rich, alkalizing formula with plenty of antioxidant-rich fruits and herbs to nourish every physical system and cell in your body. A high-quality formula will also contain cruciferous and other herbal concentrates to promote better liver detoxification, good gastrointestinal health, high nitric oxide levels, and less internal inflammation. [This is a great whole foods based multi-vitamin that we recommend.](#)

**An essential fatty acid formula.** Optimal and balanced levels of essential fatty acids are critical for hormonal health. Laboratory assessments have shown that most men will need on average 2400 mg of EPA/DHA from a pure and natural triglyceride fish oil source to achieve optimal omega 3 levels. If you supplement your diet with an omega 3 fatty acid formula, it will be important for you to check your blood levels to make sure your omega 3 index stays between 10 and 12%.

[This is a unique blend of high potency fish oil and krill oil that we recommend](#), and I personally use.

**A highly-absorbable form of vitamin D3.** Due to a chronic lack of sunshine and overuse of sunscreens, almost 85% of the population is deficient in vitamin D3. This is a serious problem since vitamin D3 is one of the most important nutrients in your body! It is not only a building block for the entire hormonal system, but responsible for activating immunity and regulating bone, brain, and cardiac health. It has also been shown to increase muscle strength and recovery as well as reaction time and balance. Optimal vitamin D3 levels are linked to high testosterone and low SHBG levels.

In order to completely restore their levels, laboratory assessments indicate that most men will need to take at least 5000 iu daily of vitamin D3 and, when possible, get 20-30 minutes of full

body exposure to mid-day direct sunlight three times a week. If you begin taking a vitamin D3 supplement, make sure to assess your blood level after four months of use. Adjust your vitamin D3 dose in order to maintain a level between 55 and 65 pg/ml.

*Mike's Note: In the winter, [this is the vitamin D3 supplement that I personally take](#)*

**An essential amino acid formula.** Even when your diet includes adequate amounts of protein, you still may lack the essential amino acids the body requires. Age, stress and poor digestion all interfere with dietary protein utilization. Even the best protein supplements are only 18% to 35% used for anabolic (protein formation) as opposed to catabolic (energy production and nitrogen waste) purposes. If your testosterone levels are less than optimal and you find yourself with nagging muscle, tendon, or joint injuries, consider an eight week trial of a 10-20 grams of a high-quality essential amino acid formula. You may find that your hormone levels recover and your youthful strength and vigor return in just a few weeks!

**A readily-absorbed magnesium supplement.** Minerals are just as important to the body as water and air because they are necessary for myriad physiological processes. Magnesium is a particularly important mineral for hormonal restoration. It contributes directly to energy production, supports healthy adrenal and DHEA function, promotes optimum muscular function, bone health and hormonal balance; it calms the nervous system and improves the quality of sleep. The use of a topical (rub on) formula is considered the “gold standard” when it comes to restoring and re-balancing the body's magnesium stores.

[This is a great topical magnesium that is very powerful.](#)

If chronic stress is an issue, consider assessing your needs with the quiz included in the **Resources** section.

## Step Nine: Evaluate your Progress



Assess your hormonal restoration progress every two weeks using the **Personal Hormone Profile** and your T/E ratio every three to four months using the **Salivary Hormone Assessment**.

If you are not seeing the progress you want, take an inventory. Have you have focused too specifically on one or a few of the recommended action steps at the expense of improving your bigger picture? Is it time to start addressing some of the more difficult or what you believed to be less important issues? If so, you probably need some additional time to implement—and remain consistent with—a more comprehensive plan of action.

### Ask yourself:

Have I tackled most the action steps outlined in the **Quick Start Guide**?

Have I read through the entire program?

Have I included some vigorous, interval training in my physical activity?

Am I still using toxic, personal care items?

Am I sleeping eight hours nightly?

Do I budget some rest and relaxation time for myself each day?

Am I having novel sex twice weekly?

Have I stopped eating sugar and wheat?

Am I using targeted, nutritional supplements?

If you answered “no” to more than two of these questions, it’s time to recommit to the program and assess yourself again in another three to four months.

If you have consistently adhered to the recommended lifestyle, dietary, and supportive nutritional interventions but continue to struggle with a T/E imbalance and related symptoms, you should consider the use of a supportive herbal formula. The temporary use of an herbal product will boost your testosterone and/or reduce your estradiol levels until your new lifestyle, dietary, and physical activity choices begin to take their full effect.

Read on to learn more about the herbal support formulas many men have found useful.



## STEP TEN: Use Supportive Hormonal Formulas.

There are literally hundreds of formulas on the market, each promising improvements in testosterone, muscle growth, sexual function and drive. After many years of working with hundreds of men, I have found that very few of these products come close to delivering on their promises.

**Please note:** If you decide to trial a hormonal supportive formula, it is important to make sure it contains only herbs and herbal extracts and does not contain any pro-hormones. Herbal formulas support your body's innate ability to make hormones. Prohormones are essentially synthetic, legal forms of steroids. In addition, whatever formula you decide to use, make sure to monitor your improvements using the **Personal Hormone Profile** and **Salivary Hormone Assessment**.

Below are a few supplement options that have an established success record with a number of men, especially those who have been following a testosterone-enhancing program like this one.

[\*\*K20 Testosterone booster\*\*](#) – This is a unique synergistic blend of herbal ingredients such as rhodiola rosea, cordyceps, Tribulus, Oat Straw, Tongkat, and I-norvalline

**OptiMale SX** is a hormonally-restorative formula that was designed to support several key, physiological processes responsible for maintaining an optimal T/E ratio. This product has been clinically proven to increase free testosterone levels without elevations in estradiol or DHT. When used intermittently as directed, OptiMale SX will remain effective indefinitely. Its primary ingredients are sea buckthorn, green oats, and nettles.

[Learn more about Optimale SX and Optimale EX here.](#)

**Pine Pollen Extract.** Pine Pollen may be one of the most potent and powerful herbs or foods available today. It is the male spore of the pine tree and has been used for thousands of years. It can be consumed daily to help restore a healthy endocrine system and balance androgen and estrogen levels. This super-charged food is a rare source of the phyto-androgens and novel plant compounds which bind to testosterone receptor sites, regular prostate health, have anti-inflammatory, liver detoxifying actions and much more. In addition, it contains over 200 bioactive nutrients, vitamins, and minerals that work as an adaptogen to restore energy, reduce signs of aging, and support a strong immune system. Learn more about Pine Pollen extract [here](#).

**Royal Maca** is a bio-energetically-grown, certified-organic root extract produced from sun dried Maca in the Andes region of Peru. Maca nourishes the hormonal centers of the brain, promoting balanced hormone health. It acts as an adaptogen, helping the body adapt to stress while improving energy and endurance. Maca can also improve the strength and function of the immune system.

***XenoProtX*** is a comprehensive formula designed to support phase I and phase II liver detoxification of environmental pollutants, endocrine disruptors, estrogen metabolites, xenoestrogens, and other toxins. XenoProtX also supports antioxidant activity throughout the detoxification process. Micronutrients, phytonutrients, and activated cofactors provide additional support for energy production, cellular protection, and liver function during crucial metabolic bio-transformation processes.

## Step Eleven: Fine Tune your Nutritional Status

**Assess your vitamin D3 and omega 3 levels.** In order for your hormonal system to work fully and efficiently, it is critical to optimize your vitamin D3 and omega 3 fatty acid levels. Less than optimal levels of either one of these key, physiological factors can inhibit normal hormone production and response. Both of these assessments can easily be done at-home. A simple finger stick and a few drops of blood are all that's required. Once completed, your card-collected sample is mailed directly to the lab for processing

For more specific details on the Vitamin D Assessment [click here](#)

For more specific details on the Omega 3 Assessment [click here.](#)

**Assess your antioxidant status.** Free-radicals are unstable molecules that, if left unchecked, can cause extensive cellular damage and impair the body's ability to function properly. Many chronic diseases are caused by free-radical damage. The damaging effects of free-radicals can be neutralized with the use of team of antioxidants derived from whole foods that include vitamins such as A, C and E along with the tens of thousands of phytochemicals naturally found in foods. These phytochemicals are collectively referred to as polyphenols, carotenoids and flavonoids. Using a simple at-home urine collection, you can assess your personal free radical/antioxidant status.

For more specific details on the Antioxidant Assessment [click here](#)

**Assess your nitric oxide levels.** Nitric oxide (NO) is a critical cellular signaling molecule that declines with age. It not only helps your body regenerate its natural antioxidant capacity, but is essential for regulating a variety of cellular metabolic processes including detoxification, blood flow, and energy production. Reduced NO levels can cause many health-related concerns such as fatigue, cardiovascular disease, and erectile dysfunction. You can assess your NO levels using a simple, at-home saliva sample and test strip.

For more specific details on the Nitric Oxide Assessment [click here](#)

**Assess your cellular metabolism.** This urinary assessment provides a “bird’s eye” view into your body's cellular metabolic processes. It allows you to identify any metabolic irregularities with detoxification, gastro-intestinal health, or oxygenation that can be improved with dietary, lifestyle, and nutritional interventions. It also assesses specific markers of DNA damage, oxidative stress, and antioxidant insufficiency. For more specific details on the **Comprehensive Organic Acids** assessment, see the **Resource** Section.

**Assess your cellular nutrient status.** While most blood tests measure metabolites or levels of nutrients found in the blood, this one-of-a-kind assessment determines your body’s actual,

intracellular requirements for vitamins, minerals, amino acids, and antioxidants. It also provides a Spectrox score—a unique measurement of your body’s total, cellular antioxidant capacity. The information obtained from this assessment will allow you to determine if your cells require any additional nutrients for optimal energy, immunity, and antioxidant protection. It also includes an option for measuring your DNA telomere length, an accurate indicator of your body’s true, biological age. For more specific details on the **Functional Micronutrient assessment**, see the **Resource Section**

## Take Action: Improve your Nitric Oxide Levels

Nitric oxide (NO) is one of the most important signaling molecules in the body. This small, relatively-unstable free radical has become one of the most fascinating and well-studied molecules in biological chemistry and medicine. Just like vitamin D3 and omega 3 fatty acids, NO plays a vital role in the functional health of virtually every organ system in the human body. And because of this, NO imbalances can lead to a wide variety of physical, mental, and sexual problems.

Below are some of most important health improvements associated with high NO levels.

Deeper sleep	Improved mood	Reduced blood pressure
Greater energy	Stronger memory	Improved arterial health
Enhanced sexual function	Faster healing	Stronger immune system
More efficient digestion	Less inflammation	

The production of nitric oxide takes place in various tissues and organs. However, its production by the artery walls is considered particularly important as it regulates blood flow and protects the arteries from disease. Many pharmaceutical medications rely on NO metabolism for efficacy. In fact, the erectile medications Cialis®, Viagra® and Levitra® work by chemically boosting nitric oxide levels to improve blood flow and enhance erections.

NO contributes directly to oxygen delivery, glucose uptake, muscle velocity, power output, gene expression, and muscle growth. It relaxes the smooth muscle lining of the blood vessels, promoting lower blood pressure and better blood flow. NO facilitates the transmission of messages between nerve cells which contributes to improved memory and learning capacities, better sleep and a more positive mood. It even supports the immune system by helping the body fight off infections and the potential development of cancer cells.

And there’s more good news—increased NO



levels have been scientifically shown to enhance athletic performance and endurance! Studies on foods rich in NO (such as red beets and kale) found it enables people to exercise up to 16% longer. The amount of nitrate in this study was the equivalent to that found in two or three red beets or a large plate of spinach. Increased NO levels account, at least in part, for the improvement in performance seen with endurance athletes training at high altitude. This is because NO levels naturally increase in low oxygen content locations.

In order to produce adequate amounts of NO, we require sufficient nitrates (not to be confused with the toxic *nitrites* used to preserve food) in our diet. Nitrates are present in some amount in most whole foods but are the highest in green, leafy vegetables such as are kale, chard, spinach and arugula; and in polyphenol-rich foods such as red beets, pomegranates, blueberries, grapes and cocoa powder.

Due to a lack of nitrates in the diet, age (we lose the ability to effectively produce NO starting at age 40), low stomach acid, imbalanced mouth bacteria, insufficient physical activity and too much stress, NO levels are in a constant state of decline. Because of this, it is very important to regularly assess and monitor your NO levels. Fortunately, this can be done simply and inexpensively at-home with a quick, morning saliva assessment.

NO is a critical factor that needs to be optimized in order to achieve optimal hormonal health and erectile function. Consistently following the restorative steps in this program and using a high-quality, concentrated, whole-food supplement can lead to significant and positive benefits for many men. But most men, especially those over the age of 35, will ultimately require supplemental NO support.

Fortunately, there is a high-quality, professional grade NO product that has been clinically-proven to raise NO levels to a normal range within just two to four months. I do not recommend using arginine as it is not effective. In addition, high arginine levels can cause a variety of metabolic imbalances. Men who use ED medications can often lower their dosage (or entirely eliminate their use) by raising their NO to an optimal level.

For much more information, on the critical importance of optimal NO levels to male hormonal health, please read, **Be All the Man You Can Be” with Nitric Oxide.**

## Take Action: What Can Go Wrong?

While a testosterone imbalance is often attributed to age, my clinical experience has led me to a different conclusion—a testosterone imbalance is almost never caused by age, but the decline of several hidden, biological variables.

As a result, the majority of hormonal deficiencies and difficulties faced by men today do not respond well to traditional hormone replacement. A more targeted and comprehensive solution can be found in the restoration of a man's basic, cellular health. When the trillions of cells that comprise each and every system of the body are nourished, they begin to function fully and efficiently. A healthy hormone system doesn't need to rely on external inputs to do its job.

As we have previously discussed, hormones are messengers; they tell the cells when and how to initiate a biochemical action. With this in mind, it is important to understand that you will only look, feel, and perform your best when the chain of testosterone metabolism is functioning well on a fundamental, cellular level. When the brain signals the testes to produce testosterone, the resulting hormone must be able to travel freely through the bloodstream and bind to a healthy cell. Because unhealthy cells do not respond well to hormonal stimulation, they are incapable of carrying out their intended functions.

If you are experiencing the classic signs of poor hormonal health—a loss of libido, sexual dysfunction, decreased muscle mass, fatigue, and low motivation—and you truly want a lasting solution, you must first understand how the problem begins. Only then will you be able to pinpoint the specific cause of your imbalance—the faulty link in your body's testosterone production chain.

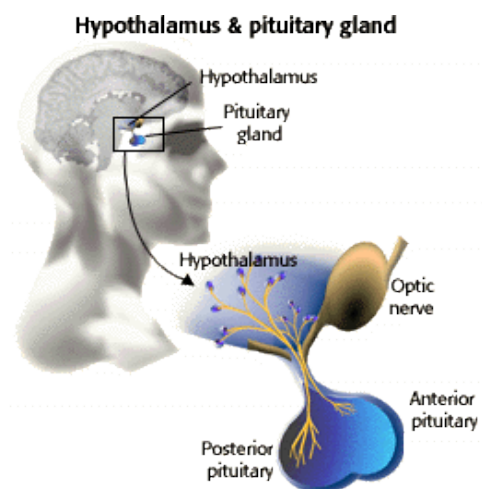
### Where can testosterone production go wrong?

#### 1. In the Brain

Anything that interferes with the healthy brain function will inhibit the release of LH—the hormone that initiates testosterone production in the testes.

The most common issues are:

**Physical and mental stress.** These increase adrenal cortisol levels which suppress the pituitary release of LH, limiting testosterone production.



**Thyroid imbalances.** Impaired thyroid function is directly associated with low testosterone as it can lead to both poor adrenal function and brain signaling. Furthermore, an underactive thyroid has many overlapping symptoms with low testosterone such as mental fog, anxiety, low energy and low libido. A comprehensive evaluation of hormone imbalance should include an assessment of TSH, free T3 and free T4.

**Hormones replacement warning** -- Whether it is bio-identical testosterone replacement or a synthetic, anabolic steroid for performance enhancement, the use of external, hormone inputs can **shut down your body's natural ability** to manufacture its own testosterone. While their effects can be significant, these agents are ultimately ineffective and harmful, creating a negative feedback loop that shuts down testosterone signaling in the brain.

Rarely, a pathological condition may be causing damage to the hypothalamus or pituitary which, in turn, interrupts the testosterone production process. These conditions include:

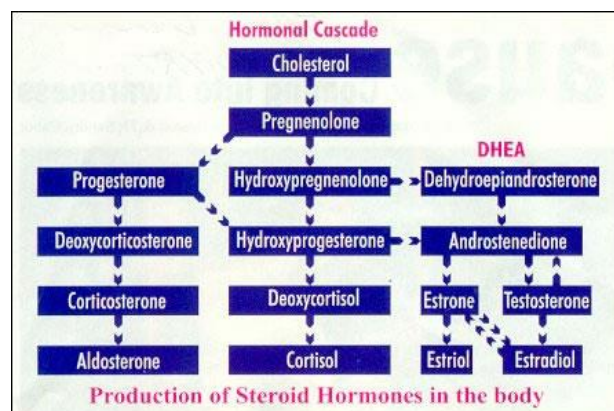
- **Brain tumors:** Resulting from damage to the pituitary gland or from the side effects of brain tumor treatment.
- **Decreased blood flow to three glands:** Resulting from medical conditions that cause bleeding and/or shock.
- **Infections:** Resulting from an HIV inflammatory response, tuberculosis, or sarcoidosis.

## 2. During Production

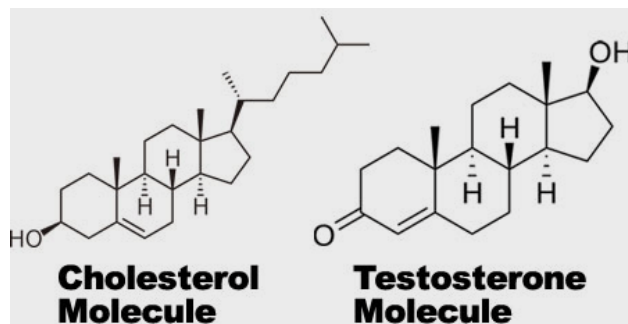
Anything that interferes with the health of the testes and/or their supply of precursor hormones will inhibit testosterone production. The most common causes are:

**Chronic stress:** When the body is under long-term stress, it prioritizes the production of cortisol over testosterone and other androgenic hormones such as pregnenolone—an important (steroid) hormone precursor. This process, called the pregnenolone steal, is a survival adaption the body employs in response to threat or danger.

**Cholesterol is the mother of all steroid hormone and depending on the body's needs it can be converted to adrenal hormones such as aldosterone (which controls mineral balance) or cortisol (which controls stress response) or to the male androgenic hormones, androstenedione, testosterone, estradiol and DHT.**



**Inadequate cholesterol and/or dietary fat intake.** If you don't consume enough cholesterol, saturated and omega 3 fatty acids; and/or you use a cholesterol-blocking or binding medication (such as a statin), you are depriving your body of cholesterol—the most important of all steroid hormones.



**Zinc deficiency:** Adequate zinc is needed for the production of testosterone in the testes. Your zinc levels will become depleted when your dietary intake of this nutrient is low or its absorption is being blocked by the use of anti-acids or H2 blockers.

Although rare, there are several pathological conditions that can damage the testes and interfere with testosterone production:

**Varicoceles:** Present in up to 15 percent of men, varicoceles can cause male infertility and interfere with the production of testosterone.

Varicoceles are bundles of enlarged veins in the scrotum that can feel like a bag of worms. The veins are swollen because of defects in the tiny valves that normally keep blood moving forward in the veins that drain from the testicles. In a varicocele, the valves don't work well, so the blood collects and swells the veins. That extra blood warms the testes, over-heating the temperature-sensitive cells that manufacture both sperm and testosterone.

Varicoceles are relatively easy to detect; you can usually feel them under the skin of the scrotum when it is in a relaxed state (such as after a warm shower). Many men with varicoceles have low-hanging scrotums. Varicoceles is an operable condition. If you have or suspect one, seek medical help.

**Scrotum injuries or infections:** If the testes are injured or become infected, they may not be able to produce an adequate amount of testosterone. Damage to only one testicle typically does not lead to a low testosterone level.

**A vasectomy:** The most popular method of birth control in the United States for married couples over the age of 30. This simple, relatively-painless operation involves cutting the tubes (vas deferens) that carry sperm from the testes to the penis.



For couples who don't want to risk pregnancy, a vasectomy appears to be the perfect answer to birth control—no pills to take or condoms to wear. But there is a downside. While medical experts have assured men that the procedure is safe and virtually free of side effects, it has been linked to higher incidence of prostate cancer, decreased levels of testosterone, and impotence.

Carefully weigh your options before choosing this procedure; [new procedures](#) that carry less risk will soon be available. If you do decide to proceed, assess your baseline symptoms and hormone levels before the procedure and six months after so that you can monitor the onset of any adverse effects.

**Mumps orchitis:** The mumps virus causes inflammation of the testes; damage to the testes may lead to low testosterone production.

**Chemotherapy and radiation exposure:** These common cancer treatments can damage the interstitial cells in the testes, which are responsible for testosterone production. The resulting, hormonal decline may be temporary as the cells recover, or it may be permanent.

### 3. Hormonal Delivery

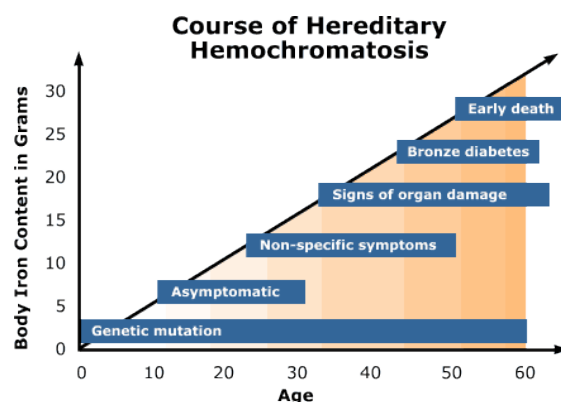
Anything that interferes with the ability of testosterone to travel freely to the cells will reduce testosterone's ability to signal your cells.

The most common causes include:

**Increased SHBG:** From an elevated estrogen level, a liver detoxification issue, excess caffeine in the diet, blood sugar imbalances (causing liver inflammation), and age.

**Mineral imbalances:** Both low magnesium and high iron can diminish testosterone delivery to the cells. While assessing functional, cellular levels of magnesium is difficult (serum magnesium levels only significantly decline with kidney disease or diuretics), it is easy to assess iron stores by measuring levels of an iron storage protein called ferritin.

As with magnesium, a cursory check of your serum iron level is not an accurate indicator of your body's actual tissue stores. Just as you can be very low on gas before the low fuel light goes on, serum levels of minerals like iron will not change until the body's tissue stores are extremely low. By measuring your ferritin stores, you'll know exactly how much gas you actually have left in your gas tank; you won't need to wait for any warning lights to go on.



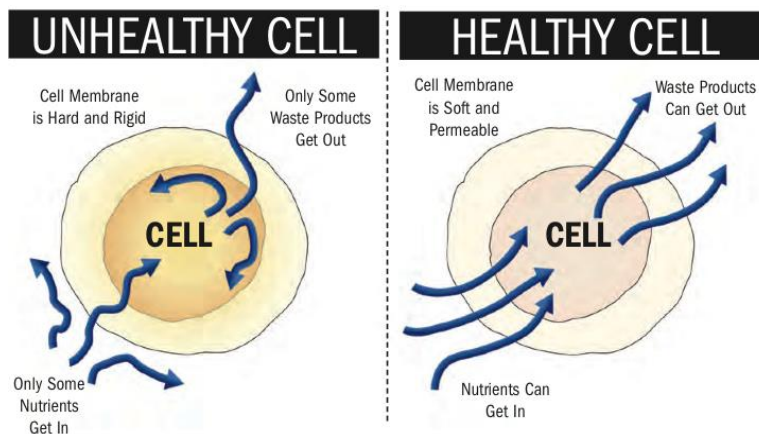
Excessive iron is a condition seen almost exclusively in men, who tend to eat more red meat (and calories in general) than women—and do not menstruate. Ingesting too much iron from the random use of supplements (many multi-vitamins contain iron), processed foods (which are iron-enriched) and a genetic predisposition also contribute to excessive iron levels.

At even moderately-elevated levels, excessive iron can cause inflammation and free radical damage (or oxidation), both of which can impair testosterone function and dramatically increase the risk of cancer, arthritis, and heart disease. Very high levels of iron can cause liver damage, diabetes, and vascular disease.

Due to these risks, it is important for all men to maintain a ferritin level of about 80 ng/ml. If your levels are less than 300 ng/dl, donate blood every 3 months until they reach a healthful range. If over 300 ng/dl, you should consult with a medical practitioner and consider a more aggressive intervention.

#### 4. Cellular Health

Anything that interferes with the ability of testosterone to freely bind to the androgen receptors or that impairs the cells' ability to carry out their intended function will reduce ability to single the cell to perform androgenic functions such as enhancing libido and sexual function and anabolic functions such as muscle growth and recovery. This effect explains why some men have few benefits from testosterone replacement, even when their testosterone levels improve.

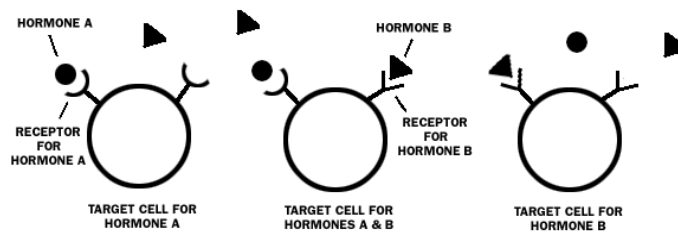


These are the most common causes:

**Nutrient insufficiencies:** Deficiencies in key, cellular health factors including vitamin D3, omega 3 fatty acids, nitric oxide, and micronutrients will cause the cell's testosterone receptors to be less sensitive to testosterone signaling resulting in impaired cellular function and poor cellular health.

**Excess androstenedione:** Androstenedione, a testosterone precursor, is a weak androgen that can compete with testosterone at the cell receptor sit. Because it is five times weaker than

testosterone, high levels of androstenedione will compete with testosterone for the cell receptor and lessen the stimulative effects.

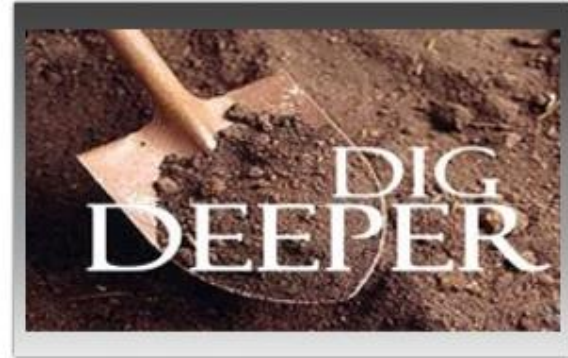


**Excess DHT:** Dihydrotestosterone (DHT) which is created directly from testosterone can also bind to a cell's testosterone receptor site. Because it is ten times more potent than testosterone, over time, excessive DHT binding can lead to the down regulation (impaired function) of the testosterone receptor—and to a diminished resistance to testosterone stimulation.

**Excess exogenous testosterone replacement:** The body naturally produces testosterone in short, pulsatile bursts throughout the day. The use of testosterone (either as a cream or injection), especially in higher doses, can result in reduced, cellular sensitivity and a poor cellular response. This is the primary reason why the effects of testosterone replacement therapy often decline over time.

## Step Twelve: Identify Underlying Cause of your Hormone Imbalance

While making a strong and ongoing commitment to optimizing your hormonal health will measurably improve your health and fitness results, unresolved symptoms are a sign that some additional investigation may be necessary. Is there an unseen and previously-unidentified source of hormonal inhibition at work inside your body?



You have learned there are a number of potential problems working against optimal male hormone health. In addition, while you certainly want to make sure there is no medical reason for your problems, the reality is that only a very small percentage of male hormone issues are caused by pathology. The most common causes being benign pituitary adenomas, varicocele and testicular infections.

For the vast majority of men suffering from hormone-related issues, the most common culprits are discussed below.

***Mental and physical stress.*** We all know that stress can tear us down. Both physical and mental stress can impede male hormonal health at every step of the process.

We are all undergoing some form of stress on a daily basis. While saliva hormone assessments can provide you with information on your adrenal hormone status, wouldn't it be great to know how your body is handling the stress you're experiencing on a daily basis.

With modern technology and a process called Heart Rate Variability (HRV), you now can! Measuring and monitoring the variation in your heart rate will allow you to assess how well-rested and stress-resistant you really are. When you're given a green light, you'll know it's time for a challenge. But when the light is red, you should take time to rest and recover. You can begin tracking your HRV by using an app, downloaded to your Smart Phone, or with a more powerful program, installed on your laptop.

***Cellular inflammation.*** When we hear the word "inflammation," most of us think of a swollen knee or ankle. But there's another kind of inflammation that happens invisibly, inside the body. The visceral, inflammatory fat in and around our abdominal area triggers an entire series of internal events that lead to the excessive production of free radicals—the root of most chronic disease.

This problem (experienced by over 50% of the US male population) damages your cellular health, causing internal inflammation and metabolic imbalances which result in an over-production of androstenedione (which will compete with testosterone for a position at the cell's testosterone receptor site) as well as estrogen which further worsen inflammation and lessen hormonal function.

***Liver detoxification and toxins.*** When the liver's function is impaired by toxins (alcohol, OTC and prescription medications, xenoestrogens, etc.) or by nutritional deficiencies, it will lead to excessive levels of SHBG and an inability to breakdown and metabolize estrogens.

This can become a big problem since normally only one percent of testosterone is normally converted to estrogen and while the half-life of testosterone is seven minutes; the half-life of estrogen is several hours. So even a small decrease in the ability to breakdown estrogen in the liver can lead to a long-lasting percentage increase in estrogenic effects on the body—even if your total estrogen levels are not elevated.

Combine this problem with the fact that xenoestrogens are very powerful at low levels and can also down regulate the cells' androgen receptor sites and you have the recipe for a male hormonal disaster.

Two silent causes of internal toxicity that should not be left undetected are excess iron and heavy metals. An inexpensive blood ferritin test can assess your iron stores and a simple at-home urine assessment can be used as a screen for the presence of heavy metals such as cadmium, copper, cobalt, lead, manganese, mercury, and nickel.

***Nutritional deficiencies.*** Optimal hormonal and cellular health requires optimal levels of vitamin D, omega 3 fatty acids, nitric oxide, and whole-food-derived micronutrients. This is a critical factor that most men will overlook. It is essential to improve the health of your cell, if you expect testosterone to carry out its intended function.

Out of the hundreds of men that I have assessed with hormonal imbalance, everyone single one of them has had less than optimal levels in this critical cellular factors!

## Step Thirteen: Investigate

The human body functions within a relatively narrow range of normalcy. When chemicals such as hormones fall outside those normal levels, there can be consequences that affect the body on a cellular, organ, or systemic (body-wide) level.

Your first step in assessing your personal, hormone health should include the use of a **personal profile survey** to assess your testosterone-related symptoms and a **salivary assessment** to measure at least your T/E ratio.

If your testosterone-related symptoms are hindering your ability to function fully and enjoy life, your T/E saliva hormone levels are deficient and/or your natural restoration program is not yielding significant results (after 6 months of solid effort), you should seek a more comprehensive solution.



It is especially important to evaluate your LH and FSH to assess pituitary function if your testosterone levels are deficient; your DHT levels if sexual problems exist (even with an optimal T/E ratio), and DHEA and cortisol levels if you have been experiencing chronic stress and have not able to restore your testosterone to an optimal level.

**Get the complete picture.** While your total testosterone level—or even salivary hormone levels—may provide a general indicator of your male hormonal health, these results may not provide you with all the information you need

For example, you can have a high testosterone level but (because of excessive binding to SHBG or cellular receptor site issues), still have symptoms of low testosterone. Or, on the other hand, your free testosterone level may lower than the norm, but because you have high androgen receptor sensitivity and optimal cellular and dopamine health, you may still feel and perform very well.

Knowing your levels of the key essential male metabolic hormones will allow you to formulate a personal—and more comprehensive—hormonal restoration program.

**Look beyond the numbers.** If you feel good and your testosterone level comes up low, view this as an early-warning sign. If you are experiencing signs of male hormonal imbalance, don't rely on a single testosterone measurement. You need to assess all your hormonal pathways in order to determine where the problem lies.

## What does a complete hormone evaluation consist of?

A comprehensive male hormone evaluation should include a combination of both serum and saliva assessments. By adding saliva markers, you will receive further insight into your testosterone production pathways and adrenal stress status. You can gain access to both serum and saliva hormone profiles [here](#). You should also consider a physical examination by a medical practitioner to rule out any physical pathology such as a varicocele.

### Your serum assessment should include:

- A Metabolic Panel
- A Lipid Cholesterol Profile
- Complete Blood Count w/ Differential
- Gamma Glutamyl Transpeptidase (GGT)
- Urinalysis, Routine
- Magnesium, Serum
- Ferritin, Serum
- Iron Serum w/TIBC
- Hemoglobin A1c
- Cardiac C-Reactive Protein Test, High Sensitivity
- Insulin, Fasting
- Luteinizing Hormone(LH)
- Follicle-Stimulating Hormone (FSH)
- Prolactin
- Total Testosterone
- Free Testosterone
- Dehydroepiandrosterone Sulfate (DHEA-S)
- Estradiol, Sensitive
- Sex Hormone binding Globulin, Serum
- Prostate-Specific Antigen (PSA)
- Thyroxine-Stimulating Hormone (TSH)
- Thyroxine (T4) Free, Direct
- Tri-iodothyronine (T3), Free, Serum

### Your salivary hormone profile should include:

- Daily Cortisol rhythm (Cortisolx4)
- 17 OH Progesterone
- Androstenedione
- DHT
- Estrone

-Progesterone

## Step Fourteen: Seek Appropriate Medical Care

Those interested in seeking additional, individual medical support should visit the following websites which offer locator searches for medical professionals with a more progressive and comprehensive approach to hormonal balancing and optimal health. Remember, even if you do need testosterone replacement or other hormonal support, there are many other factors that may also need to be addressed to optimize your foundational, cellular health. Most family practitioners and internists are just not educated enough to offer a truly comprehensive solution.

And the specialists—the urologists and endocrinologists—focus on the diagnosis of disease and surgical or pharmacological management of its symptoms, not on its underlying cause.

<http://www.worldhealth.net>

The Academy of Anti-Aging Medicine is a non-profit organization comprised of 22,000-plus member physicians, health practitioners, scientists, governmental officials, and members of the general public, representing over 105 nations. A4M is dedicated to the advancement of technology to detect, prevent, and treat age-related disease and to promote research into methods to retard and optimize the human aging process. The A4M is also dedicated to educating physicians, scientists, and members of the public on biomedical sciences, breaking technologies, and anti-aging issues.

<http://www.naturopathic.org>

The American Association of Naturopathic Medical Colleges promotes a system of medicine based on the healing power of nature. Naturopathy is a holistic system, meaning that naturopathic doctors (NDs) or naturopathic medical doctors (NMDs) strive to find the cause of disease by understanding the body, mind, and spirit of the person. Most naturopathic doctors use a variety of therapies and techniques (such as nutrition, behavioral modification, herbal medicine, homeopathy, and acupuncture).

<http://www.bodylogicmd.com>

If you need hormonal support, consider Body Logic MD. It is an affiliated group of physicians highly trained in natural, bio-identical hormone therapies which are integrated with nutrition and fitness plans.

<http://www.acam.org>

The American College for Advancement in Medicine is the leading Integrative Medicine organization in the world. Integrative Medicine combines conventional and alternative therapies to improve patient care. Rather than practicing one type of medicine, integrative physicians will often combine therapies and treatment approaches to ensure the best results for their patients. ACAM physicians do not shun western medicine, but are unique in that they incorporate any appropriate and proven alternative treatment options.



## STEP FIFTEEN: Learn More

### The Testosterone Power Drink

For a nourishing and easily-digestible meal replacement option, blend about 20 grams of protein, a serving of powdered, whole-food concentrates, a few carbohydrates (for flavor), lots of healthy fats, and a little bit of ice with a liquid base of coconut milk and water.

*Protein:* Our favorite grass-fed whey protein is here:

<http://bestgrassfedwhey.com>

*Carbohydrates:* Choose one or a combination of ½ small banana, one cooked beet, ¼ cup blueberries or strawberries, or fresh ginger root

*Phytonutrients:* Two scoops Chocoberry Blast, 1tsp. Maca

*Fats:* Choose any combination of two—one Tblsp. Udor 3:6:9 Oil, coconut oil, MCT Oil, macadamia, avocado and/or olive oil, ½ small avocado

Finish things off with a shake of Himalayan pink salt and 8 ounces of coconut milk (or 2 Tblsp. coconut milk powder), water, and ice to taste. Blend for even consistency and enjoy!

### Nutritional Products and Formulas

<http://core4nutrition.com/purepaleo-protein-vanilla>

Great tasting, allergen-free, highly digestible beef protein that also provides key collagen based amino acids to support connective tissue health.

<http://core4nutrition.com/chocoberryblast>

Packed with a powerful blend of more than 50 different fruits, vegetables and botanicals, the great-tasting Chocoberry Blast is formulated to give your body the wide variety of whole food concentrates, micronutrients and antioxidants it needs to function fully.

### Foundational Nutritional Supplements

<http://core4nutrition.com/learn-more>

In order to support both overall and hormonal health and performance, Core 4 Nutrition provides a proven comprehensive supplement program that provides whole-food derived micronutrients and antioxidants, highly absorbable forms of vitamin D3 and omega 3 fats and restorative essential amino acids and nitric oxide formulas in combination with at-home lab assessments that allow to track your progress. Their products are used by hundreds of men including professional and other high-level athletes to maintain cellular health and performance.

**These are other products and formulas that have proven to be effective in real world use.**

<http://www.mtcapra.com/deep-2-30>

Deep 30 grass-fed goat protein

<http://www.sunwarrior.com/product-info/warrior-blend>

Hemp, pea and cranberry protein blend

[http://wholeworldbotanicals.com/info\\_royalmaca](http://wholeworldbotanicals.com/info_royalmaca)

Royal Maca is bio-energetically grown for increased potency, produced from sun dried maca roots, precooked, and gelatinized to produce a powerful and effective maca concentrate.

[Click here for The BEST Organic, low-mold coffee and premium MCT oil. Add some grass-fed butter to your cup of Bullet Proof® coffee and you're good to go for hours!](#)

Topical magnesium in the [most absorbable form can be found here](#).

## **Laboratory Assessments**

<http://core4nutrition.com/assessments>

Core 4 Nutrition offers a variety of at-home and lab assessments for all the critical nutritional and hormonal factors that you need to optimize your cellular and hormonal health. These include vitamin D3, omega 3 fats, antioxidants, nitric oxide, saliva and serum assessments for critical hormone markers, amino acids and more advanced panels including a comprehensive anti-aging serum panel, a urinary metabolic and gastrointestinal healthy panel and both saliva and serum telomere assessments that allow you to determine your true biological age and track if you can slow down aging over time.

Here are links to just a few of the lab assessments Core 4 Nutrition offers: :

<http://www.greatplainslaboratory.com/home/eng/gpl-tox.asp>

Assess and identify your toxic chemical load.

<http://www.metametrix.com/test-menu/profiles/organic-acids/organix-comprehensive>

Assess your body's cellular processes and the efficiency of your overall metabolic function.

<http://www.spectracell.com/mnt>

Determine your personal, intracellular requirements for vitamins, minerals, amino acids and antioxidants.

<https://titanovo.com/>

Assess your median telomere length and longevity genotype with this simple, at-home urine assessment.

## **Natural Personal Care**

<http://www.ewg.org>

Environmental Working Group's research brings to light a number of unsettling facts about the personal care industry that you have a right to know. It shames and shakes up polluters and their lobbyists. It rattles politicians and shapes policy. It persuades bureaucracies to re-think science and strengthen regulation. It provides practical information you can use to protect your family and community.

<http://safecosmetics.org>

The Campaign for Safe Cosmetics is a coalition effort launched in 2004 to protect the health of consumers and workers by securing the corporate, regulatory, and legislative reforms necessary to eliminate dangerous chemicals from cosmetics and personal care products.

## **Household Products**

<http://veggiewash.beaumontproducts.com>

A 100% organic vegetable cleaner that can be used to remove pesticide residues

<http://www.kleankanteen.com>

Stainless-steel, BPA-free water containers

<http://www.seventhgeneration.com>

A full selection of household cleaning products

[http://eartheasy.com/live\\_nontoxic\\_solutions.htm](http://eartheasy.com/live_nontoxic_solutions.htm)

Recipes for homemade cleaning solutions

## **Sleep and Recovery**

<http://www.myzeo.com/sleep>

Track the depth and quantity of your sleep.

<http://restwise.com>

Track the rate and status of your recovery.

<http://www.earthing.com>

Unique products that allow you to experience the benefits of grounding inside your own home.

<http://www.heartmath.org>

HeartMath tools and training are dedicated to helping people reduce stress, self-regulate emotions, and build energy and resiliency for healthier, happier lives.

<http://www.bioforcehrv.com>

An affordable and easy-to-use way to monitor your HRV (heart rate variability).

<http://www.perfectbreathing.com>

The simple act of breathing provides a practical, powerful pathway to better living. It is not some unattainable state that requires a lifetime of practice and sacrifice, but a potent source of energy that you can start taking advantage of today to dramatically impact your health, performance, and emotional well-being.

<http://www.bluezones.com>

Blue Zones reveals the secrets of the longest-living societies in the modern world.

Make sure to read the PaleoHacks blog for great ideas for healthy grain-free recipes, delicious healthy Paleo desserts, Primal workouts, and other ways to live healthier, and with more energy:

<http://blog.paleohacks.com>